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EVOLUTION OR CREATION?

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EVOLUTION OR CREATION?

BY

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FOREWORD

OF late years the Author has been often invited to give addresses to audiences of University students and others on subjects connected with the relation of Science and Religion.

Some of these lectures have been given under the auspices of the Inter-Varsity Fellowship of Evangelical Unions at High Leigh Hoddesdon; at Cambridge, at Bristol, and in London; others arranged by The Bible Testimony Fellowship, at the Crystal Palace, Sydenham; at Edinburgh, and at Norwich.

A friend suggested that these addresses might be made useful to a larger audience if reprinted and published.

It was, however, found that too much repetition of ideas and phrases occurred to make this feasible, and that the only possible course would be to rewrite the subject-matter arranged in readable form. This has accordingly been attempted in the present little volume.

The chief topic, it will be seen, is the validity of the doctrine of Evolution as it has grown up out of the Darwinian theory of the origin of animal species, also extended to cover the origin of the human race, and further in its outcome in the general theory of Evolution of the Universe.

This theory, though an unverified speculation, is still so widely accepted as truth that anyone venturing to question it is regarded either as ignorant or else bigoted.

Nevertheless, its teachings are in such opposition, especially as regards the origin of the human race, with those of the Inspired Scriptures, that it is an unquestionable duty on the part of those who still maintain faith in the Divine origin of the Scriptures to examine carefully how far this evolutionary theory is sufficiently or scientifically demonstrated. Though the widest publicity is generally given in the Press to any utterances of eminent men on the evolutionary side, yet little or no notice is taken of any arguments against Evolution, and hence for the most part students hear only one side of the case.

The present little book is therefore an attempt to show, first, that the theory of Evolution gives no adequate solution of the questions of fundamental origins. It cannot explain the source of Matter, Life, or Mind, and it opposes all teleological arguments for their origin in a Supreme Intelligence and Creative Power. Then, secondly, the evolutionary explanation of the birth of the Moral Sense and Religious Instincts of mankind is entirely inadequate, and it cannot give the least account of the mode of happening or cause of the great events on which the Christian faith is founded. Its general result is to destroy belief in them.

Whilst, then, this theory dries up the fountain from which alone any remedies can be drawn to ease the struggles, sorrows, and sins of the present evil world, it offers nothing in exchange on which mankind can build a " lively hope " for the future.

It insists strongly on man's kinship with the beasts, but it is powerless to give man the smallest hope of any life beyond the grave, or any satisfaction for the deepest yearnings of his soul. It appears to offer a solution of certain intellectual problems, but it does so at the cost of destroying faculties in man more necessary for the continuance of his life. It invites man apparently to partake of the fruit of the Tree of Knowledge, but in effect it debars him from coming to the Tree of Life.

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EVOLUTION OR CREATION?

CHAPTER I

THE UPGROWTH OF THE IDEA OF EVOLUTION

THERE is hardly any word more frequently used in the present day than the word Evolution. We meet with it in newspapers, magazines, books, addresses, and even in sermons. It is used to express an idea which is taken to be the outcome of the best modern thought. It is assumed to concentrate in a single convenient term the final result of the deepest philosophic meditation on the phenomena of the Universe. Yet how seldom, if ever, does any writer or speaker who uses it begin by giving any exact definition of its meaning, either to him or to others. Its very vagueness and indefiniteness seems to be the chief source of its utility and charm. It is, in fact, a kind of algebraic x in linguistic use, which can be taken to possess, or to be given, many different meanings as required.

Those who have read Lewis Carroll's amusing child's book, *Through the Looking-Glass*, will remember that the heroine, little Alice, has a conversation on one occasion with Humpty Dumpty sitting on a wall, about the meaning of words :

"When I use a word," Humpty Dumpty said in rather a scornful tone, "it means just what I choose it to mean—neither more nor less."

"The question is," said Alice, "whether you *can* make words mean so many different things."

"The question is," said Humpty Dumpty, "which is to be Master—that's all."

Humpty Dumpty went on to explain that certain words were like a portmanteau: one could pack into them more than one or even many meanings. Alice was, however, left unconvinced, as any intelligent child would be, whether such a process was really legitimate or consistent with exact thinking.

But now it is evident that for many writers the word Evolution is a portmanteau word, and can have put into it many different meanings.

General usage shows that the primary meaning of the word Evolution is to describe a process, an effect, or a fact, namely, that nothing reaches a state of final perfection or completeness instantly, or at one jump, but always by a series of stages of gradual improvement. Nothing arrives at finality at once in human manufacture or invention. Everything proceeds towards it by slow steps.

The early stages of such great inventions as the steam engine, the gas or oil engine, the electric telegraph, the telephone, incandescent lamp, wireless telegraphy, or the thermionic valve, were crude or rudimentary.

They only reached their present condition by innumerable stages of slow advancement. Nevertheless, each step of improvement has been due to the careful thought of ingenious and talented minds. It was, in short, the expression or manifestation of a thought, and thought is the operation or manifestation of Mind.

The notion that any important improvement in these human inventions had made itself, or appeared quite spontaneously, would be ridiculed by any sensible person. We give high honours and great credit to those exceptional minds which have the power of conceiving new ideas of practical value, because the ability to do this is very rare. Few persons have any conception of the intense thought and originality concerned in the invention of such simple and familiar appliances as a sewing-machine or wireless receiver.

When we take a comprehensive look at this earth on which we dwell, or on the starry Universe of which our sun and earth are but inconspicuous members, we also see effects there and states which indicate that this earth and the stellar Universe have not always been as they are now, but have passed through various stages on the way to their present condition.

Places on this earth which are now dry land, we can prove have once been the bottom of deep seas. Localities which are now covered with deep oceans have at one time been land clothed with vegetation and the habitat of now-extinct forms of animal life. Tennyson expresses this fact in words of perfect diction in his *In Memoriam* when he says :

> There rolls the deep where grew the tree.
> O earth, what changes hast thou seen !
> There where the long street roars, hath been
> The stillness of the central sea.
>
> The hills are shadows, and they flow
> From form to form, and nothing stands ;
> They melt like mist, the solid lands,
> Like clouds they shape themselves and go.

Our earth, therefore, has passed through many stages on the way to its present condition ; and we have good reason to believe that it was formerly a ball of incandescent matter on which no life as we now know it existed ; but by gradual cooling and condensation it reached a state in which vegetable and animal life on it became possible.

In the same manner, when we investigate the Universe of stars with our powerful telescopes, spectroscopes, and other astronomical appliances, we find in different parts of it arrangements of Matter which seem to indicate progressive changes from a simple to a more complex condition.

We find, for instance, that our Sun is a rather unimportant member of a vast group of similar stars, which group we call " our galaxy." It contains stars which are evidently at different periods of their life-history—a few, very much larger than our Sun, and of a more rarefied material, and at a lower surface temperature. Some are much hotter, and some again are cooler on the surface, and much more dense as regards material. Although the " life " of a star may extend over a period of thousands of millions of years, so that we cannot observe it for a single star, it is yet probable that it does pass through stages which may be called its youth, its maturity, and its decay. It begins probably as a mass of rarefied and rather cool gas of enormous size, it rises in temperature as it shrinks and becomes at its maturity a blazing furnace of an enormously high temperature, and it ends its life as a black and burnt-out cinder of dense material, yielding no light or heat.

But we have more information yet as to the circumstances of its birth. Far outside the limits of that great group of stars we have called " our galaxy," at distances so vast that light takes more than a hundred million years to fly over the interspace, there lie other great galaxies of stars, so to speak, in the making, which are called " island universes," or nebulæ. In some cases the spectroscope informs us these are mere immense masses of gas or highly rarefied matter in revolution, and being whirled round as shown by their spiral shape.

In other cases we see specks or concentrations of matter which indicate a slow process of condensation in certain parts, or the formation of solid masses. In other cases the condensation is carried so far that the telescope shows us a nearly spherical or ovoid mass of separate stars.

Here, again, the process is so infinitely slow that we cannot watch the progress in any single nebula, but from the fact that in different instances there are clearly different stages of advance we can infer that there is not only a " life-history " to a single star but a life-history to a galaxy or family of stars, of which it is a member.

As an illustration of the correctness of this view we might take the following analogy :

Suppose we were permitted to visit the large studio of some sculptor who is a very busy and appreciated artist and whose work is in much demand. Imagine that we are only allowed to remain in the studio a very short time, and that we see the artist at work on a single bust or statue, but that he works so slowly that during the time we are permitted to watch him we cannot see any progress at all in the particular work on which he is engaged. Suppose, however, that we look round the studio. In one corner we see a shapeless block of marble evidently fresh from the quarry, or we see a formless mass of clay. At another place we see a block of marble having very, very roughly the outline of a human body or a mass of clay resembling in crudest manner a human head and shoulders. At a third place, suppose we see blocks of marble or masses of clay in a still more completely human form ; and, lastly, in other places nearly complete and perfect statues and busts.

What we should legitimately infer from our inspection would be that the sculptor has a very large number of commissions on hand. Some of these he has hardly begun and some are partially complete. Others are so far forward that they are ready to be delivered to the purchasers or sent to an exhibition. Hence we should conclude that any particular work of art was not instantly produced but went through a series of stages on its way to completion, although our short visit to the studio did not allow us to see the whole process carried out before us for any one piece of work.

But this analogy is not quite perfect, for the following reason. We only see these celestial bodies, stars and nebulæ, by the light which they send to us. Light travels through space with a speed of about 186,000 miles a second, or a distance of about 6 million million or 6 billion miles in a year. Astronomers call this distance a *light year*, and express stellar distances in light years. Thus the nearest star to our sun is about 4¼ light years from it, and the most distant visible nebula we can now see is about 150 million light years from us. The mind falters in the endeavour to grasp what these vast figures or distances mean. Nevertheless the result is that we can never see the whole Universe as it is at the same instant. When on a clear, dark night we gaze up at the star-spangled sky, with its hundreds of bright twinkling points of light, these stars are not all actually as, or in the positions in which they seem to be, at that instant. We see some as they were a dozen, some a score, some perhaps a hundred or more years ago. Some have long since vanished from the places in which we think we see them. Hence, when we see or take a photograph of a distant nebula we are not seeing or recording its present state but what and where it was a hundred or a hundred and fifty million years ago.

In spite, however, of this difficulty there is evidence enough to show that any one star or any one nebula probably passes through a series of states in a vast period of time, and if we strictly limit the meaning of the word Evolution we can use it to describe a series of sequences in condition without any postulate as to the causes of them, without denying that each advance or stage of improvement has been due to the operation of Mind and Thought.

Thus we can in this sense speak quite appropriately of the Evolution of wireless telegraphy or of the petrol engine or any other human invention. There is, then, a legitimate use of the word Evolution if it is employed merely to describe a *process* or a history, or set of changes of a gradual nature. This, however, is not the manner in which the word is used, nor is this the meaning given to it by many naturalists at the present day. In many modern writings or speeches the term Evolution is evidently used to connote a *self-acting operative cause or agency* which by itself or automatically brings about a gradual improvement in anything, even in the Universe as a whole, without any connection with, or dependence on, the purposive thought of a Mind or the Will of a Personal and Intelligent Being.

There can be no doubt that in the last century of philosophic thought there has been an earnest endeavour to discover, if possible, such impersonal, automatic agencies or causes capable of making gradual improvements or advances in Nature, but which are destitute of any direct dependence on the self-conscious Mind and Will of a Supreme Intelligence. In this sense the idea attaching to the word Evolution is essentially atheistic, for it is not an effort to interpret or discover the method of the Divine operations, but an attempt to dispense with the very idea of God and substitute for an Intelligent Creator an impersonal non-intelligent agency. Yet the strange thing is that it is impossible in the last resource to drive out of our minds the firmly fixed idea that the ultimate source of all things must be, in a sense, Purposive.

We see that clearly illustrated in the tendency of non-theistic scientific thought to personify abstract ideas or conceptions such as that underlying the word "nature." Thus, for instance, the word "Nature" is spelt with a capital N and has associated with it feminine pronouns *she* and *her*; in other words, the abstract term nature, which is merely a name for the entirety of existing things, is personified and given the character of an active operative Cause of phenomena.

Thus a very distinguished naturalist said not long ago:

"Nature does not waste time or effort with chance, fortuity, or experiment, but *she* proceeds directly and creatively to *her* marvellous adaptive ends of biomechanism."[1] Note the personal pronouns.

Another eminent biologist, in reference to certain nervous structures, said:

"Nature seems to have hit on sound principles for nervous structures very early in Evolution."[2]

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[1] Professor H. F. Osborn, *Nature*, p. 897, November 28, 1931.

[2] Sir F. G. Hopkins, *Royal Society Pres. Address*, 1931.

The phrase, "seems to have hit" implies choice or selection.

These quotations might be multiplied, but it is clear that the mere abstract idea of things in general taken collectively is personified into an operative, personal, intelligent cause; something called "Nature."

The explanation of this mental process in certain minds is that it is quite impossible for us to prolong the chain of inanimate causation mentally backwards to an infinite extent. We feel we must terminate it somewhere in a Final Cause, and that this final cause must be a purposive Intelligence and not an impersonal agency.

We can no more satisfy our thinking by an infinite series of sequences of physical events not terminating in a personal mind than we can satisfy ourselves by the idea of infinite space or infinite time. Hence, even Herbert Spencer, who was the chief exponent in the nineteenth century of inorganic evolution, was compelled to postulate as the starting-point for his philosophy an "Unknowable First Cause." He had no right to say it was "unknowable," because he could not possibly say that this First Cause could not be discovered by, or make itself known to, the human mind.

It exhibits, however, a curious tendency of modern thought to endeavour to find as the ultimate source of all phenomena something which is impersonal, yet is in a sense a purposive intelligence, whilst at the same time is non-moral, and does not concern itself with the morality of conduct. But these powers are really inseparable. We have no experience of intelligence altogether devoid of emotion, desire, or will.

When the philosopher Descartes (1596–1650) was seeking for some incontrovertible axiom on which to found a philosophy, he found it in the Latin words, *cogito ergo sum*, that is, " I think, therefore I exist."

T. H. Huxley says truly that he had no need or right to put in the word *ergo*, " therefore." The statements which are absolutely true for each of us are—" I think," " I exist." They are true because we cannot deny them. The very denials, " I do not think," " I do not exist," would be a proof that the speaker does think and does exist. But all thought and self-consciousness is personal, which means that my thought at any moment is not necessarily identical with the thought of any other human being, and my self-consciousness is not identical with, but separate from, the self-consciousness of any other being.

Moreover, we are conscious that associated with our thought there is emotion, desire, will. If I think of anything, it may be accompanied by a feeling of pleasure or of pain. I may desire to possess it, or not to possess it; or I may make an effort to obtain it, or avoid it.

We have no experience of purposive intelligence divorced from other faculties of mind. Hence we have no sufficient reasons for creating in our own minds an artificial idea such as that underlying the words " Nature " or " Evolution," which are intended to connote some purposive power which can contrive, attempt, adapt, or " hit on " various means of bringing about results in the physical world, but which yet is not personal in the sense of possessing all the other qualities associated together in Mind as we only know it.

If there is evidence of Thought in the Universe that implies that there is a Thinker. But a Thinker is a Person, and that implies personal qualities of emotion, desire, will, as well as powers of intelligent thought. A fundamental error of scientific thought at the present day is, then, the upgrowth and cultivation of the conception that the ultimate cause of phenomena can be a mere abstraction such as implied in the terms Nature or Evolution, which are granted a certain limited personalisation, but are not capable of carrying the full idea of Personality in the manner in which it is conveyed by the words GOD, CREATOR, or DEITY.

There seems to be in some, and perhaps many, minds an antagonism to the idea of a Supreme Intelligent Creator and Sustainer of the Universe, who is also the Moral Governor and Controller of intelligent and personal created beings, such as the human race, who can to some extent understand the structure and operation of His physical creation.

Whilst it is certain that it is not within the powers of the human mind, left to itself, " by searching to find out God," or to " find out the Almighty unto perfection " (Job xi. 7, 8), yet there are unquestionably signs, indications, cumulative evidences, that not only is there a Supreme Intelligence behind the physical Universe, but also evidence of a holy Will acting in the realm of self-conscious beings such as ourselves—

a Will which is concerned with conduct and relations to Himself.

The endeavour, therefore, to find in the Universe some self-acting but impersonal principles, which automatically have produced this excessively complicated and wonderful universe of inorganic and organic things out of a uniform chaos, is a fallacious idea. We shall endeavour to show in subsequent chapters that the assumptions underlying Darwin's theory of natural selection and the general theory of inorganic Evolution have not withstood the valid criticisms levelled at them.

The theory of Evolution has, therefore, grown up from an unexpressed but nevertheless powerful desire to eliminate from the idea of a Final Cause the conception of Individuality and Will.

The rationalist critic would say that in opposing this desire we are merely endeavouring to postulate or imagine a Deity who has magnified human characteristics, and thinking of the Final Cause or of God, as merely an exceedingly powerful man. Moreover, he would say that we have no experience of Thought and Will except in connection with and dependence on brain tissue. He would endorse, perhaps, the opinion once expressed by Sir Arthur Keith that what we call Mind or Soul can no more exist apart from brain than the flame of a candle can exist apart from the candle. Later on, we shall put forward arguments against this materialistic view of Mind.

Meanwhile, it is sufficient to note the manner in which the modern idea of Evolution has developed, and its dominating influence at the present time on scientific and popular thought. But we shall have to urge very weighty reasons against it, and to show that it will not account for very much in human nature which has as great a claim to be considered real as have the material objects which we can see and touch.

CHAPTER II

CREATION, OR THE BEGINNING OF EXISTENCE

IF the theory of spontaneous evolution as an explanation of the beginning and development of things in general is discarded as insufficient, then there remains the alternative conception of Creation by a Supreme Mind, and we have to consider what this implies and means.

The ordinary idea attaching to the word Creation is that something is made instantly out of nothing, or appears full grown suddenly in a place where it was not shortly before.

In this sense the word is rejected, generally as unscientific and unphilosophical because it seems to contradict the fundamental postulates of all science, namely, that every event must have a cause, and also that every event must have a sufficient cause.

We base all our actions in common life, in judicature, and in scientific investigation on the truth and validity of the above axioms.

We accept as true the maxim, *Ex nihilo nihil fit*, that is, " Out of nothing, nothing comes." Accordingly, at the present day, the old-fashioned notion of the creation of the Universe instantly by Divine fiat is by many discarded, and they seek to account for the Universe by secondary causes, though they may be compelled to admit, as even Herbert Spencer was, that there must be some ultimate First Cause. This last is generally taken by many scientific writers to be covered by the term Evolution, as already explained in Chapter I., though no definite scientific proof of it can be put forward.

Thus, at the meeting of the British Association for the Advancement of Science in 1929, in South Africa, the President of the Zoological Section, Professor D. M. S. Watson, F.R.S., who is one of our eminent naturalists, said :

"The theory of Evolution was a theory universally accepted, not because it could be proved to be true, but because the only alternative, special creation, was clearly incredible."

The incredibility, however, only exists because the popular interpretation of the word Creation is erroneous. Let us examine it a little more completely.

It is certain that the fact of creation, in the sense of a beginning of existence, is indisputable. For each one of us human beings there was a time—twenty, forty, eighty, or a hundred years ago—when we did not exist as self-conscious beings ; and yet, as we have already seen, we are absolutely certain of it now. Hence there must have been a Creation or beginning to our existence as self-conscious beings, and we can say the same for every other object of cognition.

But this raises the question at once—What do we mean by existence? When we say a thing exists, what is implied in that statement? Let us test the question by a simple illustration. Place before ourselves any simple material object, say an orange, which we affirm has objective reality, or exists. We see something which we say is yellow, or reddish-yellow, in colour; spherical or oblate-spherical in form, smooth or rough, hard or soft to the touch, and has a pleasant odour and taste.

But what is this yellowness, or hardness, or sweetness? They are sensations in a mind. They have no existence apart from a receptive mind. Light, which, according to accepted views, is a vibration or impulse of an electromagnetic nature, falls on the surface of the orange. Constituent vibrations of some frequency or rate of vibration are absorbed by the surface of the orange, and some are reflected. The reflected rays enter our eyes, and fall on the rods and cones of the retina, and impulses of a certain kind pass along the optic nerve, and stimulate the optic nervous centre in the brain. There, in some entirely inscrutable manner, they are translated into sensations of yellowness in a mind. There is, however, no identity or similarity between the sensation and a certain rate of vibration. In fact, all our ideas as to the nature of light, and there being any rate of vibration at all, are hypotheses or suppositions, based on certain other kinds of sensations.

In short, as Bishop Berkeley (1685–1753) proved long ago, the only true knowledge we have is that of our own sensations, perceptions, and ideas when we are placed under certain conditions as regards that which is not ourselves or not part of ourselves.

The idea that there is some actual independent substratum, or matter as we call it, having certain intrinsic or inherent properties is all a supposition, or hypothesis, or guess. All we can be certain of is our sensations or perceptions in what we call our Minds.

Our powers of intercommunication with our fellow-human beings enable us to infer that under the same conditions they experience similar sensations and perceptions. Thus, for instance, when the sky is cloudless in certain times of the month, we all experience certain optical sensations of roundness, whiteness, luminosity, in a certain direction, which we call the moon. We can measure its distance and size, and see with a telescope details of its surface. We find that under certain conditions there are certain sensations or perceptions in relation to it. But we may ask, would there be any moon if there was no human being to experience these sensations? Does the existence of the moon depend upon there being some one to see it, or is it there apart from the presence of any mind to perceive it?

This brings us to notice a distinction between two systems of philosophy called respectively Idealism and Realism, which, however, is due to a peculiar property of our own minds. Berkeley proved that we have no right to assume that there is any basis for our sensations, which exists apart from any Mind. On the other hand, most scientific investigators would feel that in examining the physical Universe we are not simply investigating the contents of our own minds, but something which had existence long before we existed. It is true that whilst we can think of all other human beings as non-existent or as annihilated, we cannot think of ourselves as non-existent or as annihilated. Whenever we think of any object, we necessarily think of ourselves as spectators or observers of it. We cannot detach ourselves as observers from the object.

Nevertheless, even though we cannot think of ourselves as non-existent, because the very effort to do this involves thought, which implies existence, yet we are convinced from other things that certain events took place before we were born, and that the physical Universe must have been capable of affecting percipient minds long before our mind existed. Hence it follows that pure Idealism as a philosophic creed, although irrefutable, is yet incomplete, and not entirely convincing, unless it is coupled with the necessary corollary that all things exist permanently as ideas in the Divine Mind, and that He wills a transference of a certain form of them to exist as ideas or perceptions in the minds of His created intelligences.

We have a very limited and imperfect illustration of what this may mean in the ascertained facts of telepathy. If a person concentrates thought and will powerfully on a certain idea or visual image, a person at a distance who is sympathetic may have the same idea or image reproduced in his or her mind. Also, there is a certain fact in connection with hypnotism which is in relation to the telepathic effect. When a subject is under the influence of another who has established the hypnotic state in that subject, the hypnotizer can suggest certain feelings or perceptions at pleasure. Thus he may give the subject a glass of water and tell him or her it is a delicious wine. The subject will then sip it, and express great pleasure by gestures and facial expression. Or he may give the same glass of water and suggest it is sour vinegar, and the subject will taste it, and by grimaces or other signs exhibit dislike of it ; in such cases showing that he or she really experiences the gustatory sensations due to good wine or sour vinegar.

If, then, such suggestion is possible in the case of two human minds, is it not possible for the Infinite Thought and Will of a Supreme Mind to will certain perceptions, sensations, ideas, feelings, and emotions in the subordinate minds which are His offspring ?

Philosophy presents us mainly with three alternative explanations of our experience in relation to things in general. First, that the only reality is Mind, and the phenomena of Mind : this is that philosophy called Idealism, with its various modifications. Then, secondly, there is the explanation called Materialism, which asserts that the only reality is something which exists in itself apart from any perception by minds, and that mind is only the outcome or result of the operation of certain kinds of matter, or matter in a certain state. Then, thirdly, there is the commonly accepted Dualism, which asserts that there are two equally real entities, called Matter and Mind, which are closely related and interdependent, but yet incongruous and separate. We only know Matter through Mind, and we have (it is said) no experience of Mind except in connection with certain kinds of Matter.

There is at present a widespread tendency to reject this Dualism with its irreconciliable duplex phenomena, and to fall back on a Monism of a certain kind. The unadulterated Materialism which flourished in the middle and later part of the nineteenth century, and regarded the now-antiquated solid chemical atoms and their vibrations and perhaps a hypothetical æther as the only realities, has been destroyed entirely by the advance of scientific knowledge. What we call Matter is something now seen to be far more elusive, subtle, and indefinable than was then supposed. Moreover, the actuality of mental phenomena cannot be denied, and they are entirely inexplicable in terms of atomic materialism. The brain of the living man has material qualities, and weighs so many ounces, and occupies so many cubic inches of space, and has a certain material structure. But associated with it there is self-consciousness or awareness of self, and of an external world, also qualities which prompt to certain actions we call noble or ignoble, true or false, honest or dishonest, kind or cruel, love or hatred.

The essential difference between the material and the psychic qualities are that the former can be measured in certain units. As for the psychic qualities, they may be more or less, and may vary in magnitude ; but they cannot be measured in terms of any units, far less in units used for material qualities. They are not spatial, gravitative, or arithmetic. A man may be more or less kind or honest, or truthful or generous, but we cannot measure his love in cubic inches nor his honesty in ounces or pounds or in any other units. Neither is it at all possible to explain these psychic properties in terms of atomic arrangement or motion or combination.

It is absolutely impossible to admit that a number of material atoms arranged in a certain way can become conscious of their own existence or of the existence of other atoms. Such crude materialism as that of Cabanis and K. C. Vogt, that the brain secretes thought as the liver secretes bile, is no explanation at all. Nor is the analogy already mentioned used by Sir Arthur Keith a valid one, namely, that what we call the Mind can no more exist apart from the brain than the flame of a candle can exist apart from the candle itself. There are abundant phenomena which indicate that whilst the brain is the organ of the mind, it is not the mind itself.

The true relation is analogous to that of the musician and his musical instrument. The materialist points out that every injury to the brain is accompanied by some defect in mental powers, and he therefore argues that the mental powers are nothing but the brain in operation, and not distinct from it. But the same is true of the musician and his organ or piano. Any injury to the pipes or strings involves a corresponding diminution in the ability of the musician to produce music. But the organ or piano, however perfect, can produce no music without the musician. If we imagine the musician to be invisible, that would render the analogy complete.

Moreover, the intellectual powers of different men vastly exceed any possible material differences in their brains. Between a Newton, a Kelvin, or a Maxwell, and an uneducated peasant, the differences in mentality can hardly be expressed in words, but the actual anatomical differences in the brain tissues would not be nearly as great. Again, quite young children have often shown very abnormal genius for music, art, literature, or mental arithmetic. Mozart composed music at five years of age; Terah Colbourn and George Bidder, as mere boys, could perform astonishing feats in mental arithmetic, and in some cases these powers decreased rather than increased with the development of the brain. All these things indicate strongly that the Mind is more than brain.

Many scientific men, however, whilst recognizing the indisputable facts of psychics, revolt against the Dualism which regards Matter and Mind as separate entities, and give their adherence to a philosophic creed of Monism which regards matter in certain forms as having psychic qualities.

Exponents of this creed in the last century were Alexander Bain, John Tyndall, and others. Their effort was to deny that there are two distinct entities in the Universe called Matter and Mind, and to hypothecate only one entity, possessing both material and psychic properties. But this does not evade the real difficulties, but rather shifts them to another place.

The primary qualities of Matter as matter are its space-occupying quality measured in cubic units, and its inertia, or mass, measured in mass units. In addition, it has spatial area and such qualities as density and chemical composition. All of these are measurable qualities.

The exponents of Monism, however, postulate that Matter in certain forms has purposiveness, powers of adaptation to circumstances, knowledge of events, selection between alternative courses of action, and so on. This does not in any way explain how these two sets of incongruous qualities are connected, or can arise. More than that, they can be detached. The living human brain has both material and psychic properties according to this view. But if we pass through it an electric shock of more than a certain intensity, the psychic powers all vanish. It becomes dead, yet the material properties remain as before. Monism of this kind merely attempts to put into one chamber the irreconcilable qualities which Dualism puts into two chambers, and it leaves all difficulties unexplained.

If, then, neither Materialism nor Monism supply adequate solutions of the problems of existence, there remains the answer given by Theistic Idealism, namely, that the Universe is not a Thing ; it is a Thought, and Thought implies a Thinker. In other words, it is essentially an Idea or Thought, in a Universal Divine Omnipresent Mind ; and certain parts or aspects of this thought are as it were manifested continually to subordinate created minds, who are the offspring of this Eternal Mind.

The physical world is a permanent possibility of sensation and perception to our minds, due to the permanent thought of a Supreme Mind. We are quite unable to explain or define Mind in terms of any simpler ideas. The object of investigation is in this case the instrument of research, because the only mind of which we are immediately conscious is our own mind.

Whatever philosophy we adopt, we have to accept certain final ideas which cannot be resolved into others, and the only way in which we can decide between different philosophies is by the pragmatic test, namely, that that one is most likely to be true which works best in practice, and is consistent with the widest range of facts. According to this view, Creation consists, not in making something out of nothing, but in a beginning to the manifestation of the Infinite Divine Thought and permanent Will to subordinate or finite minds, and no one can say that this is incredible. It may be granted that we cannot form the least idea of the details of such events. If we could understand them, it would imply that the Divine Mind is not infinitely beyond the human mind in powers. We have, however, no ground for rejecting a statement as untrue because we cannot at present understand it.

We should not allow children in the schoolroom to refuse to accept as true that which they could not understand, but which one day they may understand. And we, the most learned of us, adults, are but children in the school of the Universe, surrounded on all sides by unravelled mysteries and anomalies we have to accept as facts, but which we cannot understand. To those who reject the idea of Creation by Divine Fiat as incredible, we can only say, as Hamlet said to Horatio :

> " There are more things in heaven and earth, Horatio !
> Than are dreamt of in your philosophy."

But the rationalist and sceptic would probably say we are taking for granted that this ultimate reality is a Divine Mind. What proofs have we for the existence of this Supreme Intelligence or omnipotent Will? The more detailed statement of the argument, in favour of the affirmative answer, must be left to a later chapter. But it is sufficient here to say that, whilst what is generally called the argument from design is far from complete, yet there are strong indications that that argument remains sound so far as it goes. There are adaptations of means to an end, and compensating effects in natural phenomena which cannot be the result of chance or automatic operations. Then there are numerical relations between things which are not accidental, and require intelligence on our part to understand them, and therefore some other Intelligence, not our own, to produce or place them. Finally, there is a quality of Beauty and our appreciation of it, which is a characteristic and power almost impossible to account for by any automatic evolutionary operations.

Some of the rationalist arguments against the idea of Creation have been undermined by the growth of scientific knowledge regarding the nature of Matter. The old solid indivisible atom of last century has been thrown overboard. Its place was taken by the electronic theory, which indicated that material atoms were modelled on the solar system with a nucleus as centre and a family of electrons revolving round it. The nucleus was built up of so-called protons and electrons. These last were proved to be particles or atoms of electricity and thus tangible Atomic Matter resolved itself into conformations of vastly more minute electric particles or centres of electric force.

But experiment has shown that these electrons and protons act not only as particles, but as trains of waves, and the solar system theory of atomic structure is therefore being replaced by a so-called wave theory of Matter. The question then arises—What are these waves or undulations? The answer is, that by a wave in nature we mean a state of some medium in which there is a periodic change in the energy of the medium at any one place at equal intervals of time, and at any one time at equal distance along a certain line.

The term "energy," here used, requires a careful definition.

Certain changes in Nature take place by themselves. In other cases we have to overcome some resistance, or make some exertion to cause them. Thus heavy objects fall down to the ground when released, but to lift them up we have to exert force or make an effort. Water flows by itself downhill, but to pump it up requires exertion. It is the same with regard to heat and electricity. Whenever we make any displacement against resistance, it requires the expenditure of something we call energy. Whenever the change takes place spontaneously, or by itself, energy is transformed—takes another form. It appears that there is in the Universe, not merely what we call Matter or material substance, but something more intangible and indefinable called Energy.

In fact, Matter is only one form of Energy. We human beings cannot create or destroy this Energy. It is constant in amount, but is manifested to us in many different forms. Thus, Heat is only the energy of vibrating atoms of matter. A mass of matter in motion, such as a motor-car or train, has energy called kinetic energy, and in the same way Light, and electric currents are manifestations of energy in particular forms. Whenever energy is transformed from one kind or type to another, it is always by a definite rate of exchange, and we cannot have it in one form without putting an equivalent out of existence in some other form.

Hence all changes or phenomena in Nature involve transformations of Energy, and without this the Universe would be dead and changeless, a place where nothing happened at all. Also it is clear that Matter in certain forms can be transformed into Light and Heat, or Radiant Energy, and that in radiant energy we have very rapid transformations of energy taking place in time and space. The whole physical Universe, therefore, palpitates with changing Energy, whilst the subtle and elusive qualities of this Energy make it more akin to Thought than Things, and closely connected with the ever-acting Divine Will and Purpose of which the All is a Manifestation to us.

The sum and substance, then, of this brief survey is that the Universe, considered apart from Mind, is unintelligible. It is a continual manifestation of Mind to minds, and not anything which exists apart in and by itself. Here, however, we have to bring to bear on the problem careful analysis. We have to avoid, on the one hand, the error of Pantheism and that view of the Divine Immanence—which confuses or ignores the distinction between the Creator and His creation ; and, on the other hand, we have to steer clear of what has been called the carpenter Theory of creation which regards the Universe as something made by Him and then left to itself.

The Deity in His essential Nature and Attributes is above and before any manifestation of Himself He has been pleased to make. There was a "beginning" to this revelation of His Thought—"In the beginning God created the heaven and the earth" (Gen. i. 1). But there was no beginning to Himself, "From everlasting to everlasting, Thou art God" (Ps. xc. 2). The idea of Creation is not, therefore, incredible; it is the necessary outcome and accompaniment of a conviction of the existence of a Supreme Deity in any adequate sense of the word.

On the other hand, the close analysis of the ideas connected with the term Evolution shows them to be insufficient as a philosophic or scientific solution of the problems of reality and existence.

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CHAPTER III

THE THEORY OF ORGANIC EVOLUTION

WE have in the next place to trace out more in detail the growth of the theory of Organic Evolution proposed as an explanation of the enormous variety of different animals and plants on our earth.

There is clear evidence from fossils in the strata of the earth that this animal and vegetable population, especially animal, has not always been of exactly the same kind as at present. The question then began to be asked whether there has been a gradual change, and whether the enormous number of about a million animal species or " kinds " now known on this earth have been gradually produced, or whether they are the result of separate creative acts. Up to about the middle or early part of the nineteenth century, the latter view was widely held even by naturalists. For the most part a very large number of people accepted the account of the Creation given in the first chapters of the Book of Genesis in a very literal sense. The " days " there mentioned in the Authorized Version were taken to be periods of twenty-four hours, or one revolution of the earth on its axis, and no doubts or difficulties affected the reception of the view that creation meant instantaneous production without any stages of gradual development. As, however, knowledge increased concerning animals and plants it became clear that the number of "species" or what in common language would be called "kinds" of animals were enormous, and the same for plants. These each for the most part breed true "after their kind," and the species do not interbreed. Nevertheless in some cases a large number of varieties can be created by suitable interbreeding or crossing within the species, such as the great variety of dogs or of dahlias.

Then the progress of geology revealed the skeletons and remains of enormous reptiles and other forms of animal not now existing on this earth, showing clearly that there had been in the course of ages great changes in the types of animal life on this earth.

All these facts stimulated inquiry. About the middle of the nineteenth century definite suggestions were put forward almost simultaneously by Alfred Russel Wallace and Charles Darwin, and the latter developed them in a book published in 1859 called *The Origin of Species*, which created a great sensation, and marks a most important epoch in the history of the doctrine of Evolution.

Thomas Robert Malthus (1766–1834) had published, in 1798, a book in which he had pointed out that, as regards the human race, population tends to increase faster than the food or means of sustenance, and predicted a time when this would have great effects. Darwin was impressed still more with the evidence of this in the case of the animal races. The procreation is abundant, but there is a great struggle for food, and to escape from enemies in the case of those animals which form food for others. Also there are the destructive influences of environment and accident.

A single cod fish may lay several million eggs, but very few of these are fertilized or come to maturity, and the same applies to many species of insect or other low forms of life. Hence there is a great struggle for existence, and the strong and well endowed have the best chance to survive. Contrary to the case of the human race, in the animal world "the race *is* to the swift and the battle *is* to the strong" (Eccles. ix. 11). The swiftest antelopes escape from the claws of the lion and the strongest birds secure the food. Darwin's especial contribution to the subject was his hypothesis or suggestion that the eggs, ova, or germs, or seeds of animals or plants from the same species are not absolutely alike, but there are accidental differences in many directions. These are produced under similar conditions generally, but are not turned out exactly alike, as in the case of pins or bullets or other articles made by human machinery.

Darwin's additional assumption was that those slight differences which give any advantage to the animal in continuing to live, preserve the individual, and then that peculiar advantage is passed on from generation to generation and increased at each transition. In order that this process might result in the production of such very diverse animal forms as do exist, a vast space of time was necessary, and hence the Darwinians made immense demands for the extension of geological time backwards.

Darwin was a wonderful observer and collector of facts, and had great powers of presenting his account of them in such form as to compel assent to his conclusions. Hence his theory of Natural Selection, as he called it, to account for the production or origin of species, made a powerful appeal, was hailed with delight by a large number of naturalists, and secured strong advocacy by skilful controversialists, such as T. H. Huxley, E. H. Haeckel, and others. Before very long it was so widely accepted as true that any attempt to refute it or raise objections to it was deemed to arise from crass ignorance or obstinate superstition.

There are, however, many arguments which can be urged now against Darwin's hypothesis.

One of the most obvious of these is that small differences between very youthful progeny have no preserving value until they become large, and they cannot become large until they are of use. Or, it may be said, that the very small differences have no utility in view of the great influence of chance or accident on survival. Thus, for instance, the Darwinians explain the swiftness of the antelope by saying that the quick-running antelopes escape the lions and other cat-tribe, and the slow ones get caught and eaten. Hence swiftness is a protective quality. But the lion is not a sportsman. He does not give the young antelope a fair start and catch him if he can. He springs on him from behind a bush, or will do so when his attention is not alert. The Darwinians explain the keen eyesight of the bird by the argument that the bird with best vision is able to see the worm or other prey at the greatest distance or most clearly. But there is a large element of accident, and the bird nearest to the worm often gets it first !

They explain the long neck of the giraffe by saying that with its long neck it can feed on the higher branches of trees and see its enemies farther off. This may be all to the good when its neck is six feet long, but what advantage was it to a young giraffe to have a neck two inches longer than his brother or sister giraffe ? In short, the bodily structures or modifications which, when largely developed, give advantage in the struggle for existence, are of little or no advantage when they are small or very slightly developed. But it is just when the individual is young that it requires the protection so that it may live and breed.

Darwin's theory, then, depends essentially for its validity on the accumulated effect of small accidental variations of structure which are supposed to be handed on from generation to generation and increased at each step. These variations being in the same direction and of protective utility to the individual. But if the variations in the eggs or progeny are accidental, then they may be just as often retrogressions as advances, and not always cumulative in the same direction.

Furthermore, if all the birds, beasts, fishes, and reptiles and other invertebrata have been derived from a few primæval types of life, where, we ask, are all the fossil evidences in the earth's strata of this derivation? The Darwinians say that very little of the earth's strata has been explored, and also that the only parts which could be preserved geologically are the bony skeletons or shells, cases, or hard external parts. Nevertheless, it is remarkable that there is so little to support the wide claims of the Darwinian theory in the observed facts of palæontology.

In the opinion of many naturalists the strongest objections to Darwin's theory are to be found in the discoveries of Gregor Mendel, an abbot of Brünn, in Austria, made in 1865, but lost sight of for a time until rediscovered by the Dutch botanist, Hugo de Vries, and the English biologist, William Bateson.

The essential truth in this discovery was that what is transmitted from one generation to another are not infinitesimal variations or small accidental differences in structure or powers, but certain unit characters or genetic factors which are passed on, so to speak, in full size, and in a certain numerical ratio.

As an illustration of the meaning of this, we may take the following example: There is a particular kind of fowl which fanciers call a blue Andalusian from the glossy nature of its plumage. It is obtained by crossing or mating together a certain type of black plumage fowl with a white one with grey splashes. The product or first generation of such matings are all blue Andalusians and alike. If the males and females of this first generation are mated pair and pair, the next generation or grandchickens are of three kinds. One-half are blue like the parents, one-quarter are black like one of the grandparents, and one-quarter are white like the other grandparent. If these black are mated black to black, they breed true and produce only black chickens, and the same for the whites. But the blue grandchickens, mated pair and pair, when grown up produce families of chickens one-half of which are blues, one-quarter blacks, and one-quarter whites.

This process of reproduction is then repeated indefinitely, and is called Mendel's law. It is found to hold good for all kinds of pairs of contrasted qualities in living organisms, and is the largest biological generalization yet discovered. Thus, tallness and dwarfness in peas, colour in coats of guinea-pigs, and even certain characteristics in human beings, all obey the Mendelian law.

Since Darwin's time there has also been enormous progress in our knowledge of genetics—that means the details of the processes by which animals and vegetables reproduce themselves. The bodies of living organisms are built up of little particles of a jelly-like substance called cells. These consist of protoplasm, which is the physical basis of life. These little blobs of jelly have sometimes an outer protecting coat of non-living material. Each cell contains a small complicated central body called the nucleus, and in this there is a substance called chromatin, because it can be stained by certain dyes. This chromatin is arranged at a certain stage in rod-like bodies called chromosomes. There is a characteristic number of chromosomes for different forms of life. Thus, in each cell of the human body, there are 48 chromosomes, in the ox 38, in the house-fly 12, in a lily flower 24. The cells enlarge by taking in nourishment, and at a certain stage divide into two, and so multiply. Before each subdivision the chromosomes divide lengthwise, so as to double the number, and when the subdivision is complete each daughter cell has the proper characteristic number of chromosomes.

The cells in the living organism are of two kinds. There are those called body-building cells, concerned only with the upbuilding of the structure, and there are also the genetic or generative cells concerned with the propagation of the species. In by far the larger number of cases, reproduction involves the union of two cells, one from each sex. Hence, in order that the proper chromosomes number may be kept, the first step is that the generative cells each reduce their proper chromosome number to half, and then it is restored again on the union of the two different generative cells one from each sex.

The study of cell structure has now advanced so far that it constitutes a special branch of biology called Cytology, and there are indications that it can provide a true physiological explanation of the chief facts of the transmission of the genetic factors, as required by the observed phenomena of Mendelism.

Returning again to the Darwinian hypothesis, it is undeniable that great variations can be produced in a single animal or vegetable species by artificial selection or breeding controlled by man.

There are a great variety of dogs and pigeons probably derived originally from a single type. We can increase special qualities such as speed in horses, wool-bearing in sheep, milk-yielding in cows, as well as colour in roses or dahlias, and number of grains and quality in ears of wheat. But these varieties would not remain if the individuals were left to breed alone. There is the human intelligence behind it all, which directs the selection and maintains it. If Darwin's theory is true, it must be possible to effect large changes, not merely making varieties in a species, but manufacture different species, and overstep the line which delimits them.

Considerable discussion has taken place in past time as to the true definition of an animal or vegetable "species." T. H. Huxley says a species is "the smallest group of animals or plants to which distinct and invariable characters can be assigned." That means to say they breed true amongst themselves. Professor Poulton gave to the British Association another definition. He says: "A species is an interbreeding community." This implies that individuals from different species cannot interbreed continuously. Even if they can be crossed, as in the case of the horse and the ass, the progeny (in this case a mule) is sterile.

If this definition is generally correct, it puts a barrier to continuous modifications of living organisms. In a paper read to the Victoria Institute of London, in 1932, by Mr. H. R. Kindersley, entitled *The Bible and Evolution,* this non-interbreeding of different animal species is mentioned as a serious difficulty for

Darwinism. The case of the hare and the rabbit is particularly mentioned.

Here are two types of rodents with remarkable external similarity, modes of life, and " posture." Yet the well-ascertained fact is that they refuse to interbreed. Moreover, one of them produces its young blind and naked, and the other open-eyed and covered with fur. If these two similar animals have had a common ancestor, how is it that their descendants are incapable of producing a common descendant? It looks very much as if a species were a sort of blind alley for evolution !

The whole question at issue in the Darwinian theory is how far the environment or circumstances in the life of any living organism, operating on the assumed small accidental differences in the nascent progeny, have the power to foster and increase those qualities in various directions so as to tend to create the large permanent differences which amount to different species. It is obvious that there is a close connection between the environment and the animal form and appearance which operates to help concealment and preserve the animal from destruction and assist it to continue to live. Animals that live in the sandy desert are mostly sand-coloured. The polar bear and Arctic hare are white in the winter, or snow-coloured. The tiger crouching in bamboo thickets is striped and yellow. Flat fish lying on the pebbly sea bottom are speckled like stones. Insects sometimes resemble leaves and twigs, and birds living in trees are brown or green. On all sides we see protective mimicry, as it is called, in operation. But it does not follow that two things which are in sequence or connection are related as cause and effect. Day always follows Night; but night is not the cause of day. They are both the result of the axial revolution of the earth.

The Darwinian hypothesis or theory is very ingenious, and there is doubtless an element of truth in it, but there is a widely extended opinion that it is not the whole truth concerning the origin of species nor the full and final solution of that problem. As a consequence many of the leading naturalists have decided that some guiding or creating power must be postulated also to account for the origin of species. Darwin himself did not altogether exclude the idea of Creation. In the last paragraph of his book, *The Origin of Species*, not only in the first but in subsequent editions, he uses the following remarkable words. He said: "There is a grandeur in this view of life, with its several powers having been originally breathed by the Creator into a few forms or into one, and that . . . from so simple a beginning endless forms most beautiful and most wonderful have been and are being evolved."

It is clear, then, that Darwin did not deny the possibility of Divine Creation, and he seems to have regarded his theory as an explanation of the multiplication of species, and not of the origin of life.

The Neo-Darwinians, or Darwin's modern followers, will, however, have nothing to do with the idea of Creation. For them all living creatures from the amœba to man are the product of a self-acting evolution. And, indeed, they are quite logical. Because, if a Creator could create say five or ten primal forms of life or even one, why could he not create a hundred or a hundred thousand?

Nevertheless, naturalists of high position have asserted their agreement with Darwin's original idea, namely, that Creation must be associated with Evolution to account for animal species. Thus an eminent American palæontologist, Professor H. F. Osborn, in discussing "The Problem of the Origin of Species as it appeared to Darwin in 1859, and as it appears To-day," has said: "The word 'creation' must certainly be linked with the word 'evolution' to express in human language the age-long origin of species. Were Darwin alive to-day he would be the first to modify the speculations and conclusions of 1859" (*Proc. Brit. Assoc.*, Oxford, 1926).

The same naturalist has more recently said (see *Nature*, November 28, 1931, and *Proc. Brit. Assoc.*, 1931): "We are more at a loss than ever before to understand the causes of evolution. One after another, the Buffonian, Lamarckian, Darwinian, Weismannian, and de Vriesian theories of causation have collapsed."

We cannot, however, settle a question of this importance merely by quoting opinions. The case must be decided by scientific evidence and reasoned argument. This, however, has been undertaken by many competent authorities. One whose opinions are entitled to notice is Professor Leo S. Berg, a Russian naturalist, in his book, *Nomogenesis, or Evolution determined by Law* (English translation, Constable & Co., London).

In this book Berg combats first the Darwinian idea of small variations in ova or seeds, arising by chance, and being fostered by a struggle for existence. The earlier chapters are given to a detailed analysis and refutation of Darwin's principal suggestions or assumptions, and especially that chance variations are a factor in the production of organic forms.

In a later chapter he develops his views of *Convergence* as antagonistic to the Darwinian theory. By this term he means that we meet with great similarities in bodily structure in animals certainly not related to each other. For example, the claw of a scorpion resembles that of a lobster. The eye of a cuttle-fish or octopus is as well developed as that of a mammal. The term "convergence" he defines as the independent acquisition by unrelated animals of similar characters. This cannot be explained merely by chance variation or the struggle for existence.

Broadly speaking, Berg's view is that the struggle for existence does not lead (as Darwin supposed) to the preservation of single favoured individuals, but tends to maintain the standard or general type.

But although Berg is acute and forcible as a critic of Darwin, his own theory is also somewhat wanting in definiteness. He assumes as a starting-point that living matter is purposive, meaning it can adapt itself to the conditions or environment in which it finds itself, so as to make the best of it. He begins with the definition that "every property of an organism that conduces to the prolongation of life we call purposive, and such as contribute to the shortening of life, nonpurposive. Bodies that respond to stimuli in a purposive manner are called living."

But this seems merely to express in rather copious words the statement that living organisms are those that desire to go on living or have an urge to continue to live and adapt themselves to conditions so as best to go on living. Berg's view seems to be that the power possessed by living organisms of adapting themselves to their environment and responding to stimuli in a purposive manner is a fundamental quality of living matter, which we can no more explain in simpler terms than we can explain the nature of energy, matter, self-consciousness, or will.

This is all very well so far as it goes, but it does not go far enough. It does not recognize that these qualities of purposiveness and adaptation imply that in living organisms we are in the presence of some- thing more than matter or material substance or chemical atoms arranged in a particular way.

The primary and fundamental qualities of matter are its space-occupying power, and its inertia, which means that when in motion in any way it becomes the vehicle or storehouse or repository of energy, or *is* energy in a certain form.

But as we have already seen in Chapter II., we have no warrant in facts or experiment for saying that any mere arrangement of chemical atoms can give rise to qualities or powers such as awareness, or self-consciousness or adaptation to circumstances or purposiveness. We must predicate or postulate them as qualities of something not Matter, which we call Mind. Hence, if living matter exhibits these qualities, it can only be due to the *presence of Mind*, and not to mere arrangements or motions of inertial or atomic matter. For these qualities are not space-occupying nor inertial as is Matter.

The effort of Darwin, and more especially that of his followers, as also that of other naturalists, seems to have been to find some self-acting agency or cause which could give rise to the enormous number of existing animal and vegetable species, but did not involve the action of a directive self-conscious mind. Darwin found it, as he thought, in accidental variations in genetic cells, which were amplified by environment. Others have tried to find it in the increase and development of organs of life by use. Still others, in the transmission of arbitrarily acquired characters; and finally some in an occult force such as the *élan vital* of Bergson, Driesch's *entelechy*, or the older theory of a *vital force*. But every one of these theories tries to evade the hypothesis of a Supreme Universal Intelligence as the ultimate source.

When, for instance, we notice the gradual development of any human construction such as a house, we find it beginning as a mud-hut, roofed with tree-branches. Then reaching the state of a brick building, finally arriving at the modern dwelling, purposive in every part and with perfect adaptation to its end. We should scout the idea that it has been produced by chance modifications or any occult house-building force. When, however, the modern naturalist notices in the higher animals the perfectly adapted organ of vision or eye, he says it began as a little patch of matter accidentally photoelectrically sensitive on the surface of a mass of protoplasm forming some rudimentary form of living organism. Then it spontaneously developed a lens and retina, eyeball, and cornea by degrees ; and finally arrived at its perfect state in man.

If, however, we believe firmly that " every house is builded by some man," why should we not also admit that " he that built all things is God " (Heb. iii. 4), even although there may be special means by which He has built, which it is our privilege to trace out and explore.

Another serious critic of Darwinism is Dr. Albert Fleischmann, Professor of Zoology and Comparative Anatomy in the University of Erlangen, Germany. He points out, in a paper read to the Victoria Institute, London, on May 22, 1933, entitled *The Doctrine of Organic Evolution in the Light of Modern Research*, that since the date of Darwin's book, animal anatomy, and especially the individual development, has made enormous progress, and that this knowledge is quite incompatible with the leading modern tenets of the theory of organic evolution.

Fleischmann explains, first, that in all animal groups except the lowest, called the *Protozoa*, the animal begins as a small mass of continually dividing and multiplying *cells*, each consisting of a little drop of a jelly-like protoplasm. These soon form a sort of short tube of three layers, an outer called the *ectoderm*, a middle layer called the *mesoderm*, and an inmost layer called the *endoderm*. From one or other of these layers of cells the organs of the animal body gradually develop, each according to its kind or type. There is no chance about it at all, but what L. S. Berg calls *Nomogenesis*, or development according to law. It is due to the study of these three initial layers that the structure of nearly a million " species " of existing animals has been elucidated.

No one, says Fleischmann, however, can demonstrate that the limits of a species have ever been passed. Each species breeds " after its kind." A large variation within the limits of the species is possible, but such variation never grows spontaneously into an entirely different species. These are the Rubicons the evolutionists can never pass. Fleischmann says that the gradual and ever-increasing production of species by assumed natural selection is purely a product of the imagination, and not a scientific theory based on correct interpretation of facts.

Other valid criticisms of the Darwinian hypothesis are set out in a paper by Mr. Douglas Dewar in the *Proceedings of the Victoria Institute*, March 1932, entitled " The Limitations of Organic Evolution." He quotes opinions of eminent French naturalists such as E. G. Dehaut and L. Vialleton to show that the variations effected in animals by environment are strictly limited and do not transgress the limits of the natural family, and that the species is essentially the unit of the organic world, and its production indicates a special intervention of Creative Power

Other eminent naturalists now agree. The late Professor W. Bateson said, in 1922: " It is impossible for scientists longer to agree with Darwin's theory of the origin of species. No explanation whatever has been offered for the fact that after forty years no evidence has been discovered to verify his genesis of species." Again, he says in his book, *Mendel's Principles of Heredity*, p. 316 : "Had Mendel's work come into the hands of Darwin, it is not too much to say that the history of the development of evolutionary philosophy would have been very different from that which we have witnessed."

"Mendelism has, in fact, destroyed the foundation of Darwinism since it has shown that small variations cannot be accumulated into large differences equal in value to a unit character or new species." Thus, writes Professor George McCready Price, in his book, *Q.E.D.* (Fleming H. Revell & Co.).

Even as far back as 1885, Mr. Etheridge, the famous palæontologist in the British Natural History Museum, said : "In all this great Museum there is not a particle of evidence of transmutation of species."

An American naturalist, Professor T. H. Morgan, says : "To-day the theory [Darwinian Natural Selection] has few followers among trained investigators, but it has still a popular vogue that is widespread and vociferous."

These opinions might be largely multiplied from the writings of eminent men, such as Sir J. W. Dawson, Sir Charles Bell, Professor St. George Mivart, Professor Geddes, and Professor D'Arcy Thompson, and others.

One of the strongest arguments against the Darwinian theory is the almost total absence of evidence for it in the fossil contents of the earth's crust. We find there none of those numerous intermediate forms between birds, reptiles, fishes, and mammals which should exist if they are all descended from a common animal stock by infinitely small and gradual transition steps. The Darwinians often represent as evidence of direct descent or ancestry animal structures or organs that are only similar. Thus a great deal was asserted at one time of the fossil ancestry of the horse. But the Eocene horse of Wyoming of the genus *Orohippus*, claimed as an ancestor, Dana says in his *Manual of Geology*, was no larger than a fox.

Again, the sterility of hybrids or crosses between species is a fact the evolutionists cannot explain or evade.

Hence the sum and substance of the case is that Darwin's theory of the production of species by natural selection, operating on small accidental differences in the germs, is not sufficient, in the opinion of many competent naturalists, to account for the production of species. The theory is simple, and therefore attractive. But it is no special characteristic of the external world that it should be simple to understand. In fact, the more we penetrate into the secrets of the universe the more are we oppressed with the amazing complexity and wonder of it all.

T. H. Huxley says in one place that the great and ever-recurring tragedy of scientific investigation is that of a beautiful hypothesis killed by an ugly fact. But although these ugly facts spring up in unexpected places, and deal death-blows to fascinating hypotheses and theories, they really serve a useful purpose, because they only kill those hypotheses and theories that have proved not fitted to live.

The theory of Organic Evolution has in this way been undoubtedly shaken as to its foundations by new facts, and we are compelled to fall back on the conclusion that, in the production of animal species, there has been a *directivity* in operation which can only be the result of purposive thought by a Supreme Intelligence, and not any automatic impersonal causation.

In view of the indisputable fact that no one has been able to produce living matter from non-living matter here on our earth, some philosophers have suggested that it began by some living germ or particle of living matter arriving on our earth on a meteorite or travelling through space from some distant spot. But this, as Sir Edward Sharpey-Schäfer said in a British Association presidential address at Dundee in 1912, merely shifts the problem of how life arose from one place to another, and he said that this cosmic theory was improbable "in comparison with the solution of the problem which the evolutionary hypothesis offers." Here, however, as in other cases, the word evolution is employed to cover up all difficulties, and tells us nothing in fact as to the true nature and origin of life and living structures.

Even if we could produce artificially a particle of protoplasm, we should still be a long way from creating a cell with its complicated structure, far less an animal body with all its psychic properties and powers. The answer to the question, What is

Life? may not be capable of being given at all in terms and words derived from the study of non-living matter. It is a special manifestation of Divine Thought on a higher level than that exhibited in the inorganic or non-living sphere.

CHAPTER IV

THE LIMITATIONS OF THE THEORY OF EVOLUTION IN THE INORGANIC WORLD

THE apparent success of the Darwinian theory of Natural Selection, in explaining the mystery of the production of animal species, and the great approbation and enthusiasm with which it was received in the latter third of the nineteenth century, encouraged philosophers to extend it more widely and embrace in one complete theory of Evolution the elucidation of the production of the physical Universe generally.

The progress of astronomy and the vast new knowledge gained with the spectroscope about the last quarter of that century showed the large similarity between the innumerable stars of which our sun is a not very important member. In far-distant orbs we could then detect chemical elements identical with those on our earth and in our sun, and know that Sodium, Iron, Magnesium, Hydrogen, and Helium were present in vast numbers of such stars which could be classified into various grades or classes according to the type of spectrum they showed when their light was analysed by the prism of the spectroscope. Hence it was found that there was a broad homogeneity about the physical Universe which seemed to indicate that it was built up on the same plan in all parts.

Long before that date, the French astronomer, Laplace, had put forward a theory for the evolution or production of the system of planets revolving round our sun which it was inferred might be repeated in other places. This was called the nebula hypothesis, and had independently been suggested by the German philosopher, Immanuel Kant, and also in a rather different form previously by the Swedish mystic, Emmanel Swedenborg.

Laplace's theory was as follows : He assumed that all the material forming our sun and all its planets was once a single mass of gas, in the form of a sphere which was rotating round an axis, as does the earth. In consequence of this rotation, its form was slightly flattened at the Poles and bulged out at the Equator in shape like an orange.

There is a very important fact connected with such rotating bodies. If we suppose the whole mass divided up into little masses, and then multiply together the weight or mass of each little bit by its shortest distance from the axis and also by its speed or velocity, and add up all these products for every little element of mass, we obtain a quantity called in learned language the Angular Momentum of the whole mass.

Now it is a fundamental fact that a rotating mass cannot alter its own Angular Momentum by any alteration in its shape. Accordingly, if the large sphere were to shrink in size or get smaller, it must begin to rotate or spin faster, because as each particle gets nearer the axis its velocity must increase or else the product would not remain the same.

Now Laplace supposed that as the great spherica mass of hot gas got cooler it would shrink in size, and therefore spin faster, and that this spin might increase to a point at which part of the bulge at the Equator would be flung off as a ring, and this would break up into masses which would form the various planets. Laplace supposed that the same process might take place in the case of other suns, and that numerous systems of suns and attendant planets might be formed in this way by the break-up of a mass of gas-filling space called a nebula. Laplace did not, however, subject his theory to arithmetic calculation, and perhaps he had not the data to do it.

Astronomers in our day, however, know exactly the mass of the sun and of each planet, and the speed of rotation, orbital and axial, and can now calculate exactly the Angular Momentum of the whole solar system, sun and planets. When this calculation is made, a disappointing result is found. It has been discovered that the original globe of matter out of which our sun and planets was supposed to be formed, never could have had sufficient Angular Momentum to throw off any rings at all! In other words, Laplace's hypothesis for the formation of our earth and other solar planets is found to be invalid, and not true when tested arithmetically. Whether it has taken place in other parts of the Universe we cannot say, but we can say with tolerable certainty that it is not the process by which our earth has been evolved or formed.

Hence another suggestion has been put forward by a present-day eminent astronomer, Sir James Jeans, which is as follows: We know that when one celestial body comes near to another, which is either liquid or gaseous, or else covered with liquid or gas, the attractive force of this celestial body would draw the liquid or gas on the other up into two humps or elevations on the two opposite sides, and two depressions in between. If that sphere was in rotation, the humps of liquid would travel round it, producing what are called tides. This is what happens in the case of the seas on our earth. The moon and sun attract the seas on our globe, and this, combined with the rotation of the earth, cause that rise and fall of the sea-level which we call the high and low tides at the seaside.

Jeans supposes that, at the time when our solar system was a great incandescent mass in spherical form, of gas or liquid, some other wandering star came near to it, and raised great tidal elevations in the solar sphere, drawing out from the solar mass two great streamers of matter on opposite sides, which then broke up into separate lumps, just as a thin falling stream of water will break up into drops.

This is not an imaginary process, because it can be seen taking place in certain celestial photographs of two nebulæ near each other. Nevertheless, it cannot have been a mere matter of chance or accident. If the wandering star had impinged close on the solar mass they would have become welded together, and no planets could have been formed. If, on the other hand, the wandering star had passed at a great distance, tidal elevations might have been formed in the solar mass temporarily, but no streamers of matter breaking up into planets would have been drawn out.

Hence everything depended upon the wandering star passing at just the right distance from the solar mass. This might be called an accident, or chance, but it really depends upon the forces acting upon the star, or as Einstein would say, upon the space-curvature near the solar mass, which determine the path of the wandering star.

Jeans' theory is valid as far as it goes, but it involves a certain factor which from one point of view may be called accident, but from another may involve the postulation of a directive Power to bring it about. In any case, such an event must be extremely rare, and indeed may well be unique, in that our solar system is perhaps the only existing system of its type in the Universe.

Sir James Jeans has developed in his great book, *The Universe Around Us*, a more complete Cosmogony, by which comprehensive word we mean the account of how things came to be. He has, however, not failed to point out the gaps which no theory of automatic evolution has been able to cross, and are therefore fatal to its truth as a whole.

Sir James Jeans begins by the assumption that, at some far-distant past—it may have been 200 million million years ago—space became filled uniformly with very rarefied material, formed no doubt of the principal kinds of atoms we know to-day. Evolution can give no account of the manner in which this material substance was formed. It can never cross this gap of the mode or process by which matter made its first appearance. There are good reasons for the belief it could not have existed from all past eternity.

The argument supporting this runs as follows: We know by careful measurements the amount of energy in the form of light and heat given out per minute per square yard of surface by our sun, and hence from its known size we know its total radiation, and we ask: What is the source of all this energy? It cannot be produced out of nothing. Several theories to account for it have been advanced, but nothing yet suggested will account for the heat and light it has poured out for nearly eight million million years except the explanation that the sun's mass, or some of its atoms, are being transformed into radiation. This is quite possible, if an atom consists of electrons or particles of negative electricity, and protons or particles of positive electricity; because when only proton and electron happens to strike another squarely, they would annihilate each other as electricity, but create a flash of radiation resembling in nature light or heat.

Einstein has given us a rule by which we can calculate the amount of matter equal to an equivalent amount of radiation; and it is that 1 gram of matter is equal to 900 million billion ergs of radiation energy. Put in another way, this means that the annihilation of 1 ounce of matter would release energy enough to lift 60 million tons from the bottom to the top of Mont Blanc.

The sun's radiation is then produced by the annihilation of about 250 million tons of its mass per minute: nevertheless the sun's mass is so enormous that this will not sensibly affect its size for millions of years. The same process of matter annihilation must also have been taking place in all the luminous stars, and therefore we can say that the whole material Universe is slowly melting away into radiant energy, but whether there is any counter or compensating process we do not know.

The inevitable conclusion from this is that the material Universe cannot have existed for an infinite past time, or else there would be no matter now left. There must have been at some time in the far past an act of Creation of Matter, and no theory of Evolution can evade this conclusion. All the leading physicists, past and present, agree.

Lord Kelvin, one of the greatest of those in the Victorian age, said: "Science positively demands creation."

Sir James Jeans in his book, *Eos; or, The Wider Aspects of Cosmogony* (p. 35), says: "Everything points with overwhelming force to a definite event or series of events of creation at some time or times not infinitely remote. The Universe cannot have originated by chance out of its present ingredients, neither can it always have been the same as now."

In a work called *An Outline of Modern Knowledge* (Gollancz Ltd., London), in a section on the nature of the Universe, the author, Mr. J. W. N. Sullivan, says: "The Universe as we know it must have originated a finite time ago, and could not have originated by chance."

Accordingly, we can rule out on purely scientific grounds the conclusion that the Universe has had an infinite past duration or has been self-produced. Evolution can give no account of its beginning. Our only valid conclusion is that there has been an Act or Acts of Creation.

Also, we can infer not only that the physical Universe did not produce itself by any Evolution, and had a beginning, but in addition that if left to itself it will have an end.

We have seen that all phenomena in the material world are the result of transformations of energy, and that these take place at a fixed rate of exchange. There is, however, another important law, and that is that at every such exchange some of the Energy passes into the state of low temperature heat, which becomes diffused and cannot be gathered up again for use. This is called the law of Dissipation of Energy. The Energy is not destroyed, but its availability or utility is lost. Hence, in the course of time, all the Energy of the Universe must, if it is left to itself, be changed into uniformly diffused heat, and all phenomena must cease.

Hence, as Sir James Jeans says (*Eos*, p. 52) : "The Universe is like a clock which is running down, which, as far as science knows, no one ever winds up. It is at present a partially wound-up clock, which must at some time in the past have been wound up in some manner unknown to us." This gradual and spontaneous transformation of Energy into a non-useful form was called the Dissipation of Energy by Lord Kelvin, who first enunciated the principle. Thus scientific reasoning shows clearly that the Universe could not have brought itself into existence spontaneously, and that if left to itself for a sufficient time, all phenomena must cease. It had a birth, and it will also have a death.

But what is this but a scientific restatement of the words of Psalm cii. : "Of old hast Thou laid the foundations of the earth : and the heavens are the work of Thy hands. They shall perish, but Thou shalt endure : yea, all of them shall wax old like a garment ; as a vesture shalt Thou change them, and they shall be changed. But Thou art the same, and Thy years shall have no end."

Many scientific men object to this idea of a Universe coming to an end, and have speculated concerning processes of automatic revivification. But we have no scientific knowledge about such a process. Matter can be transformed into radiant energy. Energy can be dissipated ; but these are one-way operations, and will not reverse themselves.

If, then, there is a process of decay, or running downhill in the physical Universe, in what sense can we say there has been an Evolution? The fundamental concept of evolution is a movement from simple to complex, from rudimentary to more perfect.

In what proper sense of the word can we say that the material Universe is more perfect now than it was at any past time? So far as we know, all the changes in the physical Universe which go on by themselves are, so to speak, downward changes. Something is being used up, or rendered unavailable ; and there are no grounds for calling the entirety of such operations an evolution. This idea of automatic increasing complexity, or perfection, in the Inorganic World was imported into its arena by philosophers such as Herbert Spencer who, in the nineteenth century, desired to complete, as they thought, Darwin's work by extending his evolutionary ideas into the world of non-living matter.

Professor W. McDougall, in his book, *Modern Materialism* (p. 128), has strongly combated the notion that there has been any evolution in the physical Universe in any proper sense of the word. It is merely a speculative theory introduced with the object of endeavouring to unify two realms which are totally different, namely, the realm of life and the realm of inert matter.

If animal species have been multiplied by any means in the past history of the earth, we yet see nothing analogous to this in the physical world of atoms. We have no proof that the heavier or more complex chemical atoms have been built up spontaneously from simpler atoms. In fact, such changes as we do know are in the opposite direction. The complex atoms, such as Uranium, Radium, and Thorium break down by themselves into simpler forms of matter such as the Alpha particle, which is the nucleus or centre of the Helium atom, and also into electrons which are particles of electricity, and in some cases other particles are ejected. Hence there is here also no case of building-up, but a spontaneous decay or breaking-down; in short, a devolution and not an evolution.

It is true that there are progressive changes, both in the state of our earth and in such far-distant matter as the spiral nebulæ in which we can see condensations taking place in the material which will form stars. We have, however, pointed out in a previous chapter that, owing to the stupendous distance of these nebulæ, and to the finite velocity of light, we are not seeing events occurring now, but rather events which occurred some hundreds of millions of years ago. We cannot see what is happening at present, but only that which did happen in the far-distant past. We cannot say whether the changes which take place in the celestial bodies in virtue of slow cooling, shrinking in size, and radiation can be called an evolution.

There is a life-history, as already pointed out, which follows from the fundamental qualities of matter. It may be part of the original endowment of atomic matter at its creation, that it should be able to build itself up under the operation of general laws or principles into the suns and stars which constitute the visible Universe. It is, in fact, a grander view of Creation to realize that the Creator implanted in the material atoms which formed the first universally diffused nebulous material in space the powers and properties necessary to unfold itself by degrees into the Universe around us.

We do not deny that there has been such gradual development; but what we do emphatically deny is that this development did not start with an act of Creation, but is due to a spontaneous, intrinsic, and innate power in matter itself, having no dependence upon a self-conscious creative Intelligence and Will.

Immanuel Kant tells us in one place in his writings that " Creation is never finished. It had a beginning, but it will never have an end " : " Die Schöpfung ist niemals vollendet. Sie hat zwar einmal angefangen aber sie wird niemals aufhören." This may be true in a certain sense, but as regards the visible material Universe the inspired Scriptures, in their account of its creation, represent it as consisting of a series of acts which took place at some past time, and then the creative operations closed in a period of Divine rest which continues at present. Thus it says: "And on the seventh day God ended His work which He had made; and He rested on the seventh day" (Gen. ii. 2). Science and Scripture thus agree in asserting that Creation was necessary and has taken place by acts of Divine Power which are not being repeated; but that the endowment of the originally created Substance was such as to give it power to develop through a certain range under the operation of general physical principles, which were part of the acts of Creation, into the amazing wonder and beauty of the things we see. There has been an evolution in the true and limited sense of the word, but no evolution in that sense in which the word is used to connote a self-acting impersonal operative Cause.

CHAPTER V

THE FAILURE OF EVOLUTION TO ACCOUNT FOR LIFE, MIND, AND MAN

IT will no doubt be generally agreed that if the theory of Evolution is to be considered as a true account of the mode of coming into existence and development of the Universe, it must cover the whole field and not fail in critical places. This is the crucial test which we always apply to any particular theory or explanations of physical or other phenomena.

A theory, for instance, may be adequate to explain a large range of effects, but if, then, some new facts are discovered for which it is entirely unable to give any explanation, then the theory has to be modified or abandoned.

Thus in the field of optics, or light, Sir Isaac Newton, having in view a limited range of facts, propounded a corpuscular theory of light, assuming that luminous objects shot out small particles or corpuscles, which constituted light. Later on, it was found that under some conditions light was able to destroy light and produce darkness, and these effects, known as interference, could not be explained by the corpuscular theory. Hence another theory, called the undulatory theory, took its place, elaborated by Huyghens, Thomas Young, and Fresnel. This assumed that there was a non-material or super-material medium filling all space, and that transverse vibrations in this medium or æther were light. But of late years new phenomena have been discovered called photo-electric, in which light liberates electricity from certain surfaces. These are quite inexplicable by the undulatory theory of light. Accordingly we are now searching for a more comprehensive theory still, which shall be able to embrace and explain all the known facts of optics.

Broadly and generally speaking, the failure of any theory to account for any perfectly well-ascertained facts is fatal to its validity and truth. It must account for all and not merely for some of the observed phenomena if it is to be accepted as valid.

We have already seen that the theory of Evolution can give at present no account of the manner in which Matter came into existence. Between Space absolutely empty, if such a state is possible, and Space filled with the most rarefied matter there is a gulf which no theory of Evolution has been able to pass or explain.

Then a second unbridged gap is that between living and non-living, or inert, matter. We have already seen in Chapter III. that all living organisms are built up of cells, just as most houses are built up of bricks. The cell is the unit or atom of life. It consists of a very small drop or lump of a jelly-like material called protoplasm, which contains a small body of very complicated structure called the cell nucleus. The cell is sometimes enclosed in a sheath or coating of non-living material. This living unit, or atom of life, has three distinctive properties not possessed by non-living matter. First, it has the power of spontaneous motion; in some cases it puts forth long prolongations of its protoplasm called *pseudopodia* (or false feet), by which it can move. Then, secondly, if placed in a suitable medium containing nourishment, it can assimilate this, and grow in size, converting the non-living food into living matter. Thirdly, at a certain stage, it can divide into two parts, the nucleus also dividing, and thus one cell becomes two, and two become four, and so on. This is called multiplication by fission. The lowest forms of life consist, however, of one cell, but when the cells multiply there is some directive power which guides them into positions, so that the multiplying cells do not form an amorphous mass but are built up into some definite organic form.

The first great problem of biology is the manner in which living matter in the form of cells came to exist. At one time it was supposed that non-living matter could be transformed into living matter, or that what is called abiogenesis or spontaneous generation could occur. But the decisive experiments of the great French chemist, Pasteur, and of others, such as Tyndall, have conclusively shown that this is not the case, and that living matter can only be produced from living matter.

If the air is carefully purified from all germs of life, or living cells, by heating and filtering, there would be no putrefaction or fermentation in organic fluids, such as otherwise meat extracts would soon exhibit.

But since this discontinuity is not in agreement with the idea of Evolution, many eminent biologists still adhere to the belief that abiogenesis must have taken place in the past, and that the first living matter must have been produced by purely natural actions from non-living matter.

Thus, in a Presidential Address to the British Association at Dundee, in 1912, Sir Edward Sharpey-Schäfer dealt with this question, and clearly inclined to the view that abiogenesis had occurred in the past, though of course he could give no proof that non-living matter had been changed to living matter without calling to aid some supernatural power.

Also T. H. Huxley says, in one of his writings, that if he could prolong his vision sufficiently far back into past geological time, he would expect to witness this production of life from non-living matter spontaneously. However eminent the biologists may be who express these opinions, it is certain the speculations are merely personal, and rest on no basis of fact. All we do know is that there is at present an unbridged gap between living and non-living matter, and declarations that it has been bridged in the past, or prognostications that it will be bridged in the future, are devoid of any basis in observed or experimental truths. The opinions seem to rest upon the large and doubtful assumption that the doctrine of Evolution must be true, and if there are any apparent discordances they must be due to our ignorance, and that perfect continuity must exist or be assumed.

But this continuity has to be proved, and not taken for granted. We must not assume a simplicity or uniformity in nature which may not exist. As far as we have gone at present the doctrine of Evolution has not been able to explain the origin of Life any more than it has been able to explain the origin of Matter.

Then we go a long step onwards, and we find that great efforts have been made to bridge the gap that separates the human from the animal races, hoping to find there that perfect continuity demanded by the theory of Evolution.

When Darwin had, as he thought, supplied a complete solution of the problem of the origin of animal species by his theory of accidental variations and natural selection, he felt logically bound to apply that solution to the origin of the human species. Hence, in 1871, he published another large book, entitled *The Descent of Man,* in which this thesis was elaborated. Among the animal races are the various species of anthropoid or man-like apes, so called because in general bodily form they have a crude resemblance to human beings. Yet there are vast differences between the highest of these anthropoid apes and even the lowest types of existing man. The brain, which is the organ of the mind, in the lowest of modern man, has about double the bulk and weight of that in the highest form of ape. In the ape's skull, too, there are great differences, the chief ones being the heavy bony ridges over the eyes, the low retreating forehead, and the heavy, massive jaws, also other details. The arms are relatively longer and the hands or paws come down below the knees of the short, ungainly legs. The feet in the apes have a prehensile great toe, more like a thumb than a toe, but well adapted for tree climbing. The body is covered with thick hair, and furnished in nearly all cases with a tail, and the animal has a slouching gait.

It is not correct to say that Darwin derived the present human race by natural selection from the present anthropoid apes. He assumed that from the gradually developing stock of mammalian forms of life, at one or more points of time, branches were thrown off which gradually developed into species of man-like ape or ape-like man finally reaching the type of *homo sapiens*, or rational man, now occupying our earth to the extent of 1500 or 1800 millions of individuals.

In this type man reached his present bodily form, with a quite upright position in locomotion—the feet adapted for walking on level ground, and the arms relatively short; the skull has a dome-like form, and brain largely increased in size; with far less massive jaws. The body is held upright in walking and far more graceful in general appearance. It is nearly destitute of hair except on the head, which is long in the case of the female sex.

The problem that the Darwinians set before themselves was to show that the present type of man was the result of natural selection, and not of any special creation. With this object intensive search was made for remains of ape-like or early men, and a few, but only a few, fragments of skulls or complete skulls or bony parts have been found, which have been given place-names from the localities in which they were discovered, and called, for instance, Java-man, Pekin-man, Heidelberg-man, Piltdown-man, etc.

Darwinian anthropologists pronounce these fragments to be those of ancestors of modern man, and of stages intermediate between man and ape, and to supply proofs of the evolutionary origin of humanity. Also they predicate for them great age, running up in some cases to millions of years. But these statements are destitute of any well-ascertained basis in facts.

In an article on " Evolution," published in the *Nineteenth Century and After* review, for 1928, the Author wrote as follows, concerning this hypothesis : " The obvious difficulties in the acceptance of this spontaneous development of man from an ape-like progenitor are too often ignored, and words used which take for granted the thing which requires proof. A satisfactory explanation has not yet been given why one branch of some Miocene simian stock began to change its bodily organs and form in certain directions. What were the influences or forces at work to reduce the size of teeth and jaw, shorten the arms, diminish hair on the body, remove the prehensile great toe, improve the grasp of the hand, make easy the upright position of the body, enlarge the skull capacity, and increase the complexity of the brain structure ? It is not clear that some of these changes would in the initial stages have favoured the survival of the individual, and it must have been a long time before the power of inventing weapons and tools compensated for diminished protection or muscular power of the body. The word *acquired* is also used without proper explanation." Thus in an article on " The Antiquity of Man " in *Nature*, November 6, 1919, Sir Arthur Smith Woodward, F.R.S., says: "In the following Miocene epoch several groups (of mammals) that had by that time *acquired* a still more effective brain [etc.]. About the middle and towards the end of the Miocene period true apes with a higher development of brain than any mammal had up to that time *acquired* [etc.]. As the apes could no longer migrate southward those that survived must have *become* adapted for living on the ground and *acquired* carnivorous instead of frugivorous habits. By continued *development* of the brain and increase in bodily size such ground apes would *tend* to become man."

The italics are inserted by the present writer to draw attention to the manner in which the real questions at issue are covered up by a word.

Surely a very large hypothesis is here being built on a small foundation of fact. Even eminent biologists themselves seem cautious in resting the weight of their reputation upon this evolutionary bridge of doubtful strength, and, whilst not repudiating it entirely, write with restraint.

Thus Professor J. Graham Kerr, F.R.S., Regius Professor of Zoology in the University of Glasgow, in his book, *Evolution*, p. 212, says: "Palæontological knowledge regarding man's past history is still of the most fragmentary kind. Each additional scrap becomes the subject of a voluminous literature and the basis of an edifice of speculation out of all proportion to the foundation upon which it rests, and not infrequently constructed in complete defiance of the accepted canons of morphological argument. No doubt this is quite understandable in view of the intense interest of the subject, but the serious student of evolution has to step very warily when he enters this field."

Then with regard to the large assumptions made as to the great age of those fragmentary evidences of man's ancestors, the same eminent naturalist says : " Statements of this kind, involving periods of time reckoned in hundreds of thousands or millions of years, are frequently made, but like other attempts at the numerical expression of evolutionary time, they are not to be regarded as of scientific value."

It is perfectly certain that the theory of the origin of humanity by Darwinian natural selection from the same stock as other animal species stands or falls by the Darwinian theory generally, and if this last has not been proved to be true for the animal species, or insufficient to account for them, then it cannot be taken as proved to be true for the human species ; and this has not yet been done.

It follows, then, that there was no sufficient justification for a Bishop of the English Church (Bishop Barnes, of Birmingham), preaching in Westminster Abbey, on September 26, 1927, to tell his non-technical congregation, as he was reported in daily journals to have done, that : " To-day there is among competent men of science unanimous agreement that man has been evolved from an ape-like stock. He arose possibly a million years ago from a tangle of apes which began to vary in different directions."

Neither of these statements have been demonstrated to be correct scientifically, and they are in flagrant contradiction with the teaching in the Inspired Scriptures which an ordained minister of the Christian Church is empowered and authorized to follow and expound.

The skulls or fragments which have been declared to be those of anthropoid ape-like ancestors of humanity, and labelled " man," have not been proved definitely to be the remains of beings possessed of those attributes which entitled them to be called " man." The use of this term " man " begs the entire question at issue. The Darwinian anthropologists have never defined accurately where " ape " ends and " man " begins, or whether it is merely a question of bodily structure or includes mentality as well.

Without aspiring to supply any definition in detail, we can note at once certain qualities in the human species not the smallest trace of which appear in the animal species. Thus no animal has ever made any weapon or tool to help its bodily endowments. It fights with teeth and claws, horns, tusks, or hoofs, but it makes no military weapon of any kind. Nor has any animal made a tool—spade, rake, knife, hatchet, axe, or saw. No animal makes itself any artificial dress, hat or coat, shoes or ornament, to improve its appearance, nor does it dress or arrange the hair on its head. But all the very earliest true human beings do these things. No animal has discovered how to produce fire, or even to maintain it.

The explorer, du Chaillu, says he has seen monkeys sitting round a dying fire left by a hunter in a forest and warming their paws, but they have not sufficient intelligence to put sticks on the fire to keep it alive.

The animal mind or intellect is static or limited. It never progresses beyond a certain point. Domestic animals which have been in contact with man for thousands of years are no further forward intellectually than at the beginning.

On the other hand, the human mind is extremely progressive, self-educative, and assimilative. Uncultured races of men brought in contact with more advanced races adopt quickly their achievements, customs, modes of thought, and habits, and unfortunately also their vices. Animals undoubtedly can communicate with each other, conveying information, but they have not developed the powers of speech or rational thought to anything even remotely approaching that in the case of man.

In the human being the brain has developed far beyond the requirements of bodily life, self-preservation, or obtaining nourishment. His constructive powers and power of taming or controlling the animal races vastly exceed those of the highest animals.

Then, again, there are certain very special human qualities. Far back beyond historic time we find evidence in man's burial customs that he did not think the death of the body was the end of his personal life, but he had dim ideas that he was in some way in contact with an invisible world, and subject to control or judgment by invisible powers ; and that there is a qualitative difference between actions which is not a matter of indifference. The evolutionist endeavours to explain the origin of some of these special instincts of humanity by the phenomena of sleep and dreams and tribal instincts generally, but he does not explain why the same things do not appear in the animal species in the very smallest degree.

If the human species has been developed by Darwinian natural selection from certain branches on the mammalian stock, other branches of which are represented by the anthropoid apes, how has it come to pass that the human species alone has developed in such an extraordinary manner so as to *acquire* such large mental powers and brain development that it has been able to dominate all other animal species on this earth? Whence came these powers, and how did evolution simply produce them?

Great effects demand great causes, and the mere struggle for bare bodily existence is not enough to explain the origin of man's remarkable powers of mind. Moreover, as we go up in the line of continual advance, we find altruistic, ethical, and spiritual powers making their appearance which are not useful in a struggle for the life of self, but in a struggle for the life of others in a way which often causes the sacrifice of the self-life.

T. H. Huxley was greatly impressed towards the end of his life with the total insufficiency of the Darwinian theory of natural selection or organic evolution to explain the arrival of these higher ethical qualities in humanity, and he gave expression to his opinion in a Romanes Lecture at Oxford.

More and more we see the inability of that theory of Evolution called forth by the desire to explain the production of animal species to elucidate the reasons for the height of spiritual endowment to which man at his best has risen, or the depths of degradation, violence, and crime to which he has fallen. The theory of Evolution has failed to give a full and sufficient account of the origin and true nature of Man.

If, then, we turn to consider mental phenomena, we find the evolutionary theory can give no better account of the beginnings of Mind than it can of the beginnings of Matter or Life. In living matter we find qualities that are spatial and metrical—that is, which occupy space and can be measured. A piece of protoplasm has a certain bulk or volume, and it has a certain mass or, as it would commonly be called, weight. These are measurable qualities, but it is clear that living matter in addition has certain non-spatial and non-measurable qualities. It has purposiveness, choice, powers of adaptation to circumstances, and knowledge. There are numerous little particles of living matter in sea water. Some are called Radiolaria, others Diatoms, others Foraminifera. Some make for themselves an exquisite shell of carbonate of lime or chalk drawn from the sea water. Others make their little house of silica or flint, also taken from the sea water. How do these little blobs of living matter know how to tell a molecule of silica from a molecule of chalk? Yet they do.

As already pointed out, these non-spatial qualities exist only in living matter, and not in dead protoplasm, and it is inconceivable that they should depend merely upon the kind and arrangement of the chemical atoms of which protoplasm as a material substance is composed. There must be some other basis for them. Atomic materialism can give no account of their beginning even in a single cell.

But when we ascend even a little way in the scale of animal life we find the most marvellous psychic and mental qualities exercised through minute particles of living matter, called nerves and ganglia. Consider, for instance, the nervous system of the ant. Its cerebral ganglion is perhaps less in size than the tenth part of a small pin's-head. Yet here we have small living creatures who have an elaborate social life, construct complicated dwelling-places, have a division of functions into queens, nurses, soldiers, scavengers, food collectors, and watchmen, and even what correspond to men of genius amongst ourselves. They have foresight in collecting food and preparation for their young, and memory which enables them to profit by experience. They are purposive, altruistic, and wise.

The mere struggle for the life of the individual in which accidental variations in the ova or germs give an advantage for the individual to survive, cannot in the least explain the phenomena in the life of the ant or the bee.

But when we mount up to the higher levels of the manifestation of life, and consider the mental powers and achievements of men of genius among humanity, we see the entire inadequacy of any evolution as compared with creation to explain the facts.

The supreme mental powers of Newton, Shakespeare, Faraday, Milton, Dante, Handel, Beethoven, Michael Angelo, or Clerk-Maxwell appear quite suddenly, and there are no preparatory stages or gradual manifestation in previous adjoining lives. There comes a sudden flash of immense creative power and genius, and then it vanishes again. There is no evolution, but a creation. All these extraordinary mental powers do not benefit greatly the individual possessing them, but they benefit humanity at large. They are essentially altruistic, and not the product of the struggle for the life of self.

Hence our conclusion, here also, is that the doctrine of Evolution fails to give an adequate account of the origin and growth of Mind. Matter, Life, Mind, and Man present us with problems of Origin which the evolutionary theory has not been able to solve.

An ingenious attempt has, however, been made to bridge the gaps between inert and living matter and between Matter and Mind by a theory called Emergent Evolution. This is now a magical expression supposed to explain the transition over these awkward discontinuities. Briefly, its meaning may be expounded as follows : The substances called oxygen and hydrogen are gases, each with certain definite and very different physical properties. Hydrogen is inflammable, and is very light : it is the gas used for inflating balloons. Oxygen is heavier ; it supports combustion, and is necessary for life. One-fifth part of our atmosphere consists of oxygen. If we put together a certain volume of oxygen and double its volume of hydrogen, and pass an electric spark through the mixture, all the gaseous properties disappear, and we are left with a few drops of water, which has quite different properties to those of the gases. These new properties are then said to *emerge*.

In the same way it is assumed that when atoms of oxygen, hydrogen, carbon, nitrogen, and perhaps sulphur and phosphorus, are put together in a certain way, the properties of living protoplasm emerge.

But this is a mere jugglery with words, and not a true scientific explanation of the origin of life. The properties of water are purely physical. If we knew perfectly the structure of an atom of hydrogen and that of oxygen, and the manner in which the properties of a number of atoms taken together depend on those of each atom taken separately, we might predict also the properties of the water molecule formed of two atoms of hydrogen and one of oxygen, and the way in which the properties of water as a whole depend on those of the water molecule.

But these properties are wholly physical, and would all be defined in terms of space and mass ; in short, they are spatial, inertial, and metrical. When, however, living matter makes its appearance, we are confronted with a set of properties and powers of a kind totally different from those of physical properties. We meet with purposiveness, indeterminacy, teleological activity, which means actions having reference to the future and to events which have not yet happened. We have a totally changed relation to space and time.

We cannot say that purposiveness has a certain shape, size, or weight. It is not square or round, nor has it a certain density. It is non-metrical and non-temporal. It is inconceivable that these properties should be the outcome of a mere arrangement of atoms in a molecule.

The evolutionist might say that when a number of fragments of glass are arranged in a certain way, or a number of notes of music, the quality called *beauty* emerges. The answer to this is that the arrangements possess no beauty in themselves. A dog or a cow would not appreciate any beauty in them. The beauty only makes its appeal to a trained mind. The qualities of life, however, are evident in themselves and to every one, and not merely to particular individuals.

The same argument concerning emergence is applied by the evolutionists in the attempt to explain the origin of Mind. They say that, when nervous tissue has reached a certain stage of complication, Mind emerges. Here again we have the same unscientific tendency manifested, namely, the effort to cover up difficulties by the use of an ingenious word such as " emerged," " acquired," " evolved."

The notable fact with regard to Mind is that the powers we call mental, though manifested through brain or nervous tissue, do not bear any exact relation to the volume or complication of structure of such tissue. The intelligence of the ant and its mental qualities appear to be far greater than that of a cow, or even of an ape. Also it appears that large portions of the brain may be removed without affecting proportionately the psychic powers of the possessor.

On this point the reader may be referred to some very interesting experimental facts announced by Dr. J. K. Lashley, to which reference is made in a very important book by Professor William McDougall, entitled *Modern Materialism and Emergent Evolution,* p. 86 (Methuen & Co., London).

The conclusion to which we are driven, then, is that the theory of Evolution has not been able to give a scientific or sufficient account of the beginnings of Mind any more than it has been able to do so for Life or Matter. There are gaps and discontinuities over which no ingenious words or phrases have been able to build a bridge.

In Matter, Life, Mind, and Man we are in the presence of phenomena of which atomic materialism can give no adequate explanation. We have to start with the postulate that their origin lies in the activities of a Purposive Mind, manifested in part to subordinate minds, moulded and made in part in the same image.

CHAPTER VI

EVOLUTION AND RELIGION

WE have noticed in a previous chapter a characteristic of the human race, which extends far back, even beyond historic time, namely, the burial customs which indicate a human belief that the death of the body is not the end of the personality, but that something survives, or that there may be a revival.

There is not the very smallest trace of this in any true animal species. The remains of those individuals claimed by anthropologists to be intermediate links between modern man and the anthropoid apes have not been found in such abundance as to enable us to say whether any such faith existed in them, or when it in fact began.

Taking, however, the human race as it exists at present on our globe, or has existed for several thousand years past, we find, not only at all places and all times, evidence of some belief in a future life, but also belief in the existence of invisible powers, which were sometimes supposed good or well-disposed to humanity, and sometimes evil and ill-disposed. Even where the belief does not go beyond a crude faith in "evil spirits," which must be propitiated or avoided, it still bears witness to man's conviction that he is in some way in contact with an invisible world of agencies which are personal.

If we call these ideas or beliefs—even though a departure from an original monotheism—religious ideas, we can say that " man " is a religious animal, or characterized by a special quality of faith in the unseen.

In the social animals, such as the insect communities, we find an elaborate civilization or ordered community life, but we find not a trace of any tendency to take account of anything outside of material things.

The question, then, arises: How did this special human quality originate, and why does it make its appearance only in the human species?

The answer which the evolutionists give to this question is that it arose from the phenomena of sleep and dreams, and the tendency of mankind to consider anything as " alive " that exhibits spontaneous motion. Thus, if we see on the ground anything moving about, it may be an insect or a small quadruped, a beetle or a mouse, but it cannot be a stone or a stick, or any inanimate thing. In the same manner, when we observe the stars it is seen that nearly all of them move together in fixed groups or constellations over from east to west diurnally. But a few bright stars, called planets, or wanderers, move in an apparently irregular manner among the rest. Also the moon and the sun do the same. Hence, when the original monotheism had been lost, men thought that these celestial bodies, showing this irregular motion, were alive, and considered them to be deities and worthy of worship.

Again, when the familiar phenomenon of sleep and dreams was considered, deep sleep producing for a time entire unconsciousness, it was deemed to be a temporary death, and death, therefore, was thought to be a prolonged sleep. In dreams man's mind enters a fantastic world, where everything seems real and yet not real. The dream visions come and go in strange fashion, and they engender the idea that there is another world beyond this world.

Furthermore, in the phenomena of nature, we see invisible powers such as wind or air in motion, which are beneficial or injurious as the case may be. The same for rain production, electric storms, earthquakes, or failure of crops. All nature seemed to early man to be the arena where invisible personal powers had their dwelling-place, and every forest, stream, ocean, and mountain was inhabited by superhuman, invisible beings, but thought of as possessing human form.

From these facts the evolutionists have built up a theory of the origin and growth of religious ideas and customs, which seems to them perfectly valid and a sufficient account. For them religion began with the attribution of life to all the things in the physical world which move. Then, passing on, it created a belief in many deities or spirits, some good, some evil; and polytheism thus arose. Then, gradually, evidence accumulated as to the unity of the material world, and a higher and more exalted notion of morality or the relation of man to man was promulgated. Thus, slowly, the conception of a single over-ruling deity was reached, and monotheism in its various forms replaced the older polytheism.

This, very briefly, is a faint sketch of the theory of the evolutionary growth of religion, which is by the evolutionists considered to arise from inside the mind of man and his ideas of nature, and not to have any true relation to facts altogether independent of the intellect or imagination of man.

The result of the propagation of this evolutionary theory of religion in recent times has been unquestionably to weaken or destroy belief in revealed religion with its totally different conceptions or truths, which are not in any way the product of the imagination or intellect of man. The evolutionary idea, in short, is that man originates and improves his own religious ideas, just as he originates and improves his own tools, weapons, or dress. It is considered, however, that there is nothing supernatural about it, and that man can go on improving his religious ideas for an indefinite time.

There is, then, a great attraction to some minds in the idea of such a man-made religion which can grow and adapt itself to external conditions or requirements. Man wants, in short, a religion made by himself, and not one imposed on him from outside.

But in addition to any question of religious ideas of survival of the personality after death of the body, or government by, or worship of, or appeasement of unseen powers, there are the ethical relations of man to man. Considered simply as regards his body, the human being is a feeble animal. He has no hoofs, horns, tusks, or teeth like the larger mammals. The gorilla can throttle him at arm's length; the tiger or other carnivora can devour him; and the elephant trample him to death.

Now the feeble animals are all gregarious, or herd together for mutual protection and warning, like sheep, oxen, antelopes, and goats. Hence instinct and experience made the feeble animal man gather in herds. But the moment he so does, certain things become necessary to preserve the herd life. Certain things must not be done, because they are inimical to the tribe or herd. Hence arises, according to the evolutionist, the rudiments of ethics or right conduct of man to man. Moreover, there is a kind of inner warning which arises when these rules of herd ethics are broken or desired to be broken, and this in its development we call Conscience. It warns against murder, stealing, lying, cruelty, and all unsocial vices.

The evolutionists have thus given (so they think) a very complete account of the origin of this moral imperative as it is called, because certain conduct is injurious to the interests of the herd or tribe, though perhaps momentarily good for the individual. They point out that there is a gradual enlargement or improvement in conduct, and that as times go on certain behaviour is inhibited, such as religious persecution or cruel punishments such as burning alive or beheading, which were once thought to be for the benefit of the tribe.

But a more careful scrutiny of the origin of the religious ideas of humanity has shown that these evolutionary theories of ethics and religion are not a true account of the matter at all, and indeed in some cases they are the exact contrary of the truth.

A very important book was published not long ago by Dr. W. Schmidt, of Vienna, which was translated into English by Professor H. T. Rose of St. Andrew's University, Scotland: the title was *The Origin and Growth of Religion.* Dr. Schmidt has examined with great care the religious ideas of many, even the least civilized of mankind, and has found that, beneath a crust of paganism and superstition or belief in many deities, there is in all cases a fundamental belief in one single "High God," who is the Author and Sustainer of the world. He has found this in the beliefs of such peoples as the Pygmies of African forests, natives of Tierra del Fuego, Central Californians, Pastoral Nomads, Aborigines of East Australia, Hottentots, and West Africa tribes of the interior. He has found that this basic idea is not the result of any missionary or proselytizing effort, but indigenous, and dating from long-past time. Also he shows that the same idea permeates the religions of ancient days.

Schmidt's conclusion from these researches is that monotheism, or the belief in one God, is not a refinement and ultimate development of polytheism, but is the original faith of mankind.

It appears, then, that genuine monotheism in its purest form made its appearance at first contemporaneously with true humanity, and that polytheism in all its types is a corruption of this original belief, and not the basis of it.

This gives strong evidence that the deeply fixed human conviction must stand related to an external reality, and not merely be a product of human imagination. The evolutionary theories all start from the notions engendered by sleep and dreams, by which early man reached the idea that there is some intangible element in human nature which can be detached from the material body, and survives bodily death. It requires some form of sustenance, and can exert influence on survivors. Hence arises ancestor-worship and necessary provision for the deceased, and later on funeral rites, and tombs, and deification of the dead.

The next step was to assume that early man advanced to the abstract idea that all material objects possessed a spirit, and this belief came to be known in recent times by the word Animism. The evolutionists, or some of them, held that this was a necessary precursor of the idea of God as a spirit.

Andrew Lang, in the later part of the nineteenth century, combated this last assumption that monotheism had developed out of a lower animistic worship. In numerous publications he defended the assertion that an innate idea of one God, as a living Being who really exists, was an essential element in the religious ideas of peoples far outside the pale of that which is called civilization.

Here, then, we have a fact scientifically ascertained which traverses directly the teaching of the evolutionists. The idea of one God is not one which has grown up slowly in the human mind out of more rudimentary ideas, but one which seems to have sprung full-grown into the mental arena of the true human being. Here there is another well-marked discontinuity, and, therefore, an uncrossed gap over which the theory of Evolution has built no bridge.

The developed human mind is not content, however, to rest on faint instincts or adumbrations of thought. It desires confirmation by the intellect, or at least proofs of a kind to give some satisfaction to the reasoning mind. In spite of the efforts made by some philosophers to show that scientific work should merely result in an accurate record of facts or events, the modern mind has an insatiable desire to find an interconnection between events, or to relate them as so-called cause and effect. A set of unconnected events between which no relation exists no more constitutes a satisfactory view of natural phenomena than a number of separate bricks scattered about a field is a satisfactory house. The principle of causality is an indispensable foundation for all attempts to understand the external world.

Accordingly, we are led step by step along the chain of intermediate causation to a final link in the idea of an ultimate or final Cause, and that final Cause must be purposive, or have an end in view in all operations, and not be merely capricious. This, as we have seen in Chapter II., is the characteristic quality of living organisms or beings. We ourselves are immediately conscious that all our own actions are teleological —that is, have some end or purpose in view. We can find many effects in the material world which seem to be purposive or teleological, and that purposiveness obviously is not the creation of our own minds.

For instance, as a rule, substances expand when heated or get larger and contract when cooled. If we observe the effect of cooling upon water taken, say, at ordinary temperature, we notice that it shrinks or contracts or gets less in volume as it is cooled until it reaches about 40° F. or 4° C. Then, if cooled still more, it expands and expands again, when it freezes or passes into ice. No other familiar liquid behaves in this manner. If, however, we consider what happens when a pond or lake freezes on a cold night, we find that, as the cold wind blows over the surface, the top layers of water first contract and sink down, and the process is repeated until all the water has been reduced to 40° F. in temperature. Then, on any further cooling, owing to the expansion which takes place, the water freezes merely on the surface, and a sheet of ice is then formed, though the general body of the water does not fall in temperature below 40° F., and hence aquatic animals, fish, etc., are not frozen in ice and killed. If it were not for this peculiar behaviour of water, in having a temperature of maximum density above its freezing-point, all lakes and ponds would in a long winter become solid ice from the bottom upwards, and all aquatic life would be destroyed. Hence, this behaviour of water has an object or purpose, or is teleological, or has an end in view. It can hardly have arisen by accident.

Another instance of adaptation which can hardly have come about by chance is in the complimentary function of animals and plants as regards the atmosphere. Nearly all animals require to breathe in or absorb oxygen gas from the air. This combines with the carbon existing in the animal tissues, and is breathed out as a gas called carbon dioxide. On the other hand, the green parts of plants, leaves, etc., absorb this carbon dioxide from the air, and under the influence of sunlight, and aided by the material which gives greenness to vegetables, they break up this carbon dioxide, fix the carbon, and return the oxygen to the air. Hence what animals breathe out, vegetables breathe in, and *vice versa*, and the constancy of composition of the atmosphere is preserved. Many other similar cases could be mentioned of adaptation of means to an end.

In addition to this, human beings, or at any rate some of them, have an appreciation of certain harmonies of colour, sound, and form which we call "beauty." The degree to which this exists in people and nations is very diverse, but its existence can hardly be denied. There are, then, certain things and effects in nature which stimulate or satisfy this feeling in the human mind. We cannot say that this is distinctly useful, but it is certainly a source of pleasure.

Some human beings who possess what we call artistic faculty can produce articles such as paintings, sculpture, buildings, or music which possess beauty, and we know that this faculty is not common and requires a keen and peculiar sense in the producer. It seems to indicate that the Final Cause or ultimate source of things in nature must possess artistic faculty, and not only be purposive but appreciative, and have feeling as well as thought.

All the arguments, however, drawn from design, adaptation, and beauty in nature for the personality of this First Cause fall short of completeness from the presence of unaccountable opposites, or contradictions in nature, and hence are unable to compel assent. Immanuel Kant considered that a stronger argument was to be found in the moral imperative or sense of " oughtness " in the human mind that certain things are as we say " right," and others are " wrong." There is in human nature a sense of a qualitative difference between actions, and an obligation to respect it. This, which we call conscience, may be distorted or erroneously directed, but it is there in some form. As we have already pointed out, the evolutionists attribute its origin and growth to the experience that attention has to be paid to the good of the tribe, herd, or community, apart from the benefit to the individual. It is assumed to be a " herd instinct."

But although this might explain the lower levels of morality, where the commandments are chiefly negative, such as " Thou shalt not kill," " Thou shalt not steal," " Thou shalt not commit adultery," it entirely fails to explain the origin of the higher morality, where the injunctions are more positive, such as " Thou shalt love thy neighbour as thyself," " To him that knoweth to do good and doeth it not, to him it is sin." Nor does it explain the origin of the obligation, " Thou shalt love the Lord thy God with all thy heart, and with all thy soul, and with all thy mind " (Matt. xxii. 37).

Then, again, the evolutionary theory of the moral imperative does not explain the origin of the urge to undertake actions which do not benefit the individual or the community, but which excite our highest admiration and praise. Thus, if a man who can swim sees a non-swimmer in danger of drowning, and plunges in to save him, he may succeed, but lose his own life in the effort. We consider this a most noble action, but it does not benefit the one who saves; quite the reverse, and it may not benefit the community because the life of the saved non-swimmer may be a less valuable one than that of the rescuer, who is lost.

In the same way, we regard as most praiseworthy those who have suffered martyrdom in the cause of religious, intellectual, or political liberties. They lost their lives, and they were perhaps more worthy to live than those who benefited by their death. As already pointed out, T. H. Huxley, ardent evolutionist though he was, was compelled to admit at the end of his life that the theory of Natural Selection, or Evolution generally, could not explain the rise and growth of the higher branches of ethics, altruism, or self-sacrificing service.

Here, as elsewhere, the theory affords a certain plausible explanation of some effects, but when tested at crucial points, it completely fails. Such, however, is the attraction it exerts, that its validity or truth is almost invariably taken for granted, and then used to deny the possibility of any discontinuities, or events out of line with, or inexplicable by, our present knowledge, particularly any events usually called supernatural, or miraculous.

It thus comes into strong antagonism with that supernatural literature which we call the Bible. All but the very ignorant know that this collection of Books, the writing of which extended probably over a period of fifteen hundred years, is the national literature of the nation of Israel, commonly called the Jews. It is divided into two distinct parts, and comprises sixty-six different Books, written by, or attributed to, about forty different authors. None of the authors of books included under the term the Old Testament knew the authors of the books of the New Testament, and none of them knew what writings would be included in one complete set when the canon was closed. Yet when taken all together and compared, we find four remarkable characteristics not present in any other national literature.

First, *Universality*, by which word we mean that it makes its appeal or is intelligible to peoples of all nations and persons of all ages. It has been translated, in whole or in part, into nearly every language spoken on our earth. It has been broadcast in hundreds of millions of copies, and the demand for it never ceases. It is unquestionably the "best seller" of any book or collection of books yet published. It appeals to all ages. The child finds in it stories which interest him, and the oldest and most learned man material for meditation on the deepest problems of existence.

Secondly, *Organic Unity*. Although written in separate Books by authors widely separated in space and time, we yet find such a close relation between them that they seem to fit together and correspond like the stones of an arch—the keystones being the gospel narratives of the New Testament. If these last-named Books had never been written, it is not probable that the earlier portions of the literature would have survived except as literary curiosities, but would never have become known to (or have interested) the general public.

Thirdly, *Authority*. A very special quality of this literature is that it speaks " as one having authority." It never attempts to prove, argue, suggest, or hypothecate. It merely states. Everything is represented as the immediate outcome of Divine action and will. Its common phrases are " and God said," " The word of the Lord came," etc., or " Verily, verily, I say unto you." This tone of authority does not repel, but has a convincing power ; and for those who are willing to accept it as authoritative, its power of convincing, apart from argument, continually increases.

Fourth, *Veracity* and *Mercy*. No one taking a wide outlook on the present state of the human race can feel satisfied with it, or contemplate the future with confidence. Everywhere we see discontent and uncertainty, and little that gives reason to consider that there is a steady progress toward better things. We have obtained great power of utilizing and controlling the energies of nature—Steam, Electricity, and the Atmosphere are our obedient servants; and we can move from place to place and transmit intelligence with incredible speed. Invention has given us machines which perform operations formerly performed by manual power, with immense productivity. But the result has been to cause vast unemployment, and that to an extent threatening the stability of our so-called civilization.

Man has tried almost every form of government by man, and each one seems a greater failure than its predecessor. If we regard the disastrous and fruitless contests of nation with nation, or group with group within the nation, as in wars, strikes, revolutions, and political struggles for power, and compare the condition with the ordered community-life of such social beings as ants and bees, or many other animal species, we see what an error it is to assert, as the evolutionists do, that so-called sin or evil in the human race is merely the remains of the ancestral beast in man. As a matter of fact, most of the animals are highly respectable, and set a very good example in behaviour to us men. No members of one animal species show to fellow-members anything approaching the cruelty or violence of man to man.

There is no evidence to show that, left to itself, humanity is slowly treading an ethical upward path, or that the crime, violence, and internecine strife which are its prevailing characteristics are merely an inheritance from animal ancestors, and will slowly and automatically disappear in course of time.

The teachings of the doctrine of Evolution are in these respects quite out of touch with (or in contradiction of) fact and experience.

The fourth great quality of the Hebrew literature we are considering is its insistence on truth or veracity, and that our beliefs and views should be controlled by fact and experience. It enforces its teaching by vivid truthful biographies of historic men and nations. But the evolutionist or rationalist would at once ask—What ground have you for taking the statements in this Hebrew literature as authoritative or true, in opposition to the so-called conclusions of science?

The question is a very reasonable one, and must receive some reply.

One answer is to point out that the researches of modern archæologists and explorers in the Middle East are at present continually finding confirmation of the truth of its historical statements. The excavations at Ur, in Mesopotamia, by Mr. Leonard Woolley; and at ancient Jericho by Professor J. Garstang with the financial support of Sir Charles Marston; and these of Sir Flinders Petrie at Gaza; while other places in Palestine and Egypt have given very important proofs that Biblical Old Testament history is true history and not fiction.

Then, next, the researches of scholars have shown beyond doubt that the predictions made in various parts of the Old Testament as to the subsequent history or experience of the Jews, and of the Assyrians, Babylonians, and Egyptians have been fulfilled exactly, in a manner quite impossible merely as a chance. Long before the actual events took place, the fate of the peoples called Israelites and Jews was predicted in this literature, namely, their conquest and captivity by the Assyrians and Babylonians, their partial restoration to their own land and subsequent scattering abroad among all Gentile nations. So accurate was all this that, when the chaplain of Frederick the Great was suddenly asked by his master to give the shortest possible proof of the truth of the Bible, he replied, "The Jews, Your Majesty."

Then there are the still more important predictions made long before the events of the coming to the Chosen Nation of a great teacher and prophet, and of His rejection and treatment by them. The exact fulfilment of these predictions in the person of Jesus of Nazareth, and such detailed foretellings of His rejection and death at the hands of those to whom He came—as are given in the 53rd chapter of Isaiah and in the 22nd Psalm, are among the convincing proofs that this literature is not wholly the product of the unassisted intellect of man, and is certainly not the outcome of literary evolution, or a natural and normal national literature. Evolution can give no sufficient account of the origin of this history, nor of the events related in it, except to pronounce them as largely fictitious.

But all subsequent history of this literature has endorsed and sustained its supernatural character; and its wide and exact correspondence with the deepest needs and hopes of human nature, has made it the most unspeakably valued writings in the world, accepted by countless millions, not as a merely national literature, but in some mysterious way as a direct communication from the Creator of the Universe and of Man. The teaching it imparts will remain as unquestionable truth when all misleading theories of its evolution have passed away.

CHAPTER VII

GENERAL CONCLUSIONS

IN this last chapter we shall endeavour to sum up the conclusions reached, and attempt to show what have been the effects on the public mind of the teaching of the doctrine of Evolution during recent years.

In the first place, it may be well to endeavour to set out certain tendencies of scientific thought during the last century or so, and the manner in which these ideas have been diffused and appropriated by the general mass of mankind.

There seem to be two basic ideas or conceptions which have dominated all scientific thought for a long time past, although recently their grip on the human mind has become less strong.

These are covered by the words *Continuity* and *Explicability*. By the term Continuity is meant the idea that there are no sudden or violent changes or operations in nature, and no gaps in observed phenomena which cannot be bridged in thought. In short, nothing which can be called catastrophic, miraculous, or supernatural, but in all cases an unbroken chain of natural causation, and no jumps or events quite out of line with our normal experience. In a word, nothing ever makes its appearance full-grown suddenly or in a discontinuous manner.

Probably one of the first scientific workers to definitely enunciate this principle of Continuity was the Scotch geologist James Hutton. He formulated with regard to geology that the geologic processes which have been at work in the past are the same as those now in operation, and that it was not allowable to invoke or suppose any special agents which cannot now be seen to be effective. This statement formed the basis of the so-called Uniformitarian creed of Geology which has prevailed almost universally ever since. Also Lamarck, the French palæontologist, may be regarded as one of the chief founders of the theory of Evolution and continuous progress as opposed to the theory of catastrophic changes or creations.

But, then, against this hypothesis it should be noted that any observations we can make or obtain of natural phenomena extend over a comparatively very short space of time, and we have therefore to be very cautious how we extend present experience either into the past or the future.

Thus in geometry, if we were shown only a small part of a curve we might think it to be part, say, of a circle or an ellipse or some other familiar curve. If, however, we were shown a much greater length we might be surprised to find great interruptions or discontinuities.[1]

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[1] Thus the curve denoted by $y = \tan x$ is perfectly smooth and continuous from the value $x = 0$ nearly to $x = 0{\cdot}7853$. . . . But at the least increase past this last value y jumps from *plus* infinity to *minus* infinity, and the curve is discontinuous.

Then, again, it was supposed not very long ago that an atom of matter could give out or take in energy in the form of radiation, that is as light or heat or similar vibrations, in any amount. But facts have been discovered which show that this is not the case, and that it can only give out or take in such energy in certain mouthfuls, large or small, called quanta.

Accordingly, we have to be careful how we extrapolate the curve of experience or assume that events have always happened as they do now, or are perfectly continuous. The doctrine of Continuity in nature is not a demonstrated truth, but an hypothesis or supposition due to the human mind.

Then, in the next place, there seems to be another broad assumption of *Explicability*, meaning by that the capability of being understood or comprehended by the human mind, and that we can only consider as real or true that which can be brought within the ambit of the human understanding. Closely connected with this is the assumption that any inexplicable dualities or antinomies must be dismissed by denying them. The underlying idea is that if we wish the Universe to be simple so that we can understand it, then it must be simple in fact. Any irreconciliable duality, like Matter and Spirit or Mind, must be replaced by an assumed Monism, and any discontinuity such as that between living and non-living matter must be crossed by assuming that sometime in the past abiogenesis has occurred. Also if we do not like the idea of a physical Universe slowly wasting away by conversion of matter into radiation or energy passing relentlessly into a non-available type, then we are free to assume that these one-way processes are somewhere and somehow reversed, even if we do not know exactly where or in what manner.

All this, however, is the very antithesis or contradiction of the true scientific method, which consists in an absolute loyalty to fact and avoidance of all assumptions not based on it.

This attitude of mind was, however, much more general just before the conclusion of the nineteenth century than it is at present, well on in the twentieth century. Just about twenty years before the twentieth century began there was a rather strong feeling amongst physicists that we had learnt nearly everything there was to know in that subject, and that precious little remained to be discovered. Then came great surprises in the discovery of the Hertzian or Maxwell electromagnetic waves, and not long after in the Röntgen or X-rays, followed quickly by that of the radio-active elements, the non-valent elements or atoms, and the complete upheaval in physical ideas due to the researches of Einstein on Relativity and Max Planck on Radiation, leading to the discovery and enunciation of the Quantum theory which has revolutionized physics.

All this experience teaches us that at any turn in the road of scientific advance we may come suddenly on phenomena which cause a complete destruction and reconstruction of previous ideas on certain subjects. The result of this has been, however, to destroy a good deal of that cock-sureness and dogmatism which marked the science of the close of the nineteenth century. We are very doubtful now whether we know so much as we then thought we did.

Nevertheless, there remains in present-day scientific thought a strong tendency to take for granted the principle of continuity as above defined, and also to conclude that there is in the Universe a self-improving, self-maintaining quality which does not require any agency outside of the material realm to bring about advances. The word Evolution is used, not merely to describe the fact of gradual improvement or complication, but as a name for an effective cause or agency producing it.

Further, there is an adherence to the idea that the only true explanation of phenomena are those which are mechanistic—by which we mean interpreting them in terms of things or elements which have existence in space and time, and can be thus visualized mentally or depicted symbolically, and are derived from our experiences in contact with things that have spatial, inertial, and temporal quality.

The special characteristic of this mode of viewing natural phenomena is that it altogether excludes the operation of Mind and yet attempts to make up for it by arbitrarily attributing mental qualities such as purposiveness to things which are spatial and physical. It tries to explain all phenomena in terms of experiences gained in the material realm only. Hence it considers as unreal or untrue all that cannot thus be interpreted. It is, accordingly, antagonistic to or neglectful of matters of a spiritual or non-material nature and therefore to the fundamental concepts of religion.

In this connection some very weighty words may be quoted, taken from the book already mentioned, by Professor W. MacDougall, called *Modern Materialism and Emergent Evolution*, which are of great import. He says (see p. 8) : " Materialism in the literal sense has gone, never to return ; but science still renders an account of Man and the Universe which, if not positively hostile, is yet adverse to every form of Religion however broadly defined, and obstructive to every form of moral effort. And this account is the more dangerous to these interests just because it avoids the crudities of the older Materialism and is rendered in subtle and elusive terms ; in terms difficult to grasp or define and therefore in propositions difficult to refute."

Here, then, we have one great and serious accusation against the doctrine of Evolution as now disseminated, namely, that it tends strongly to produce a disregard for, and disbelief in, anything not included in the material realm or capable of receiving a mechanistic explanation, even though these neglected things possess otherwise all the characteristics of reality. It neglects and ignores these things entirely.

In one of his writings, T. H. Huxley says : " Sit down before fact like a little child. Be prepared to give up every preconceived notion, follow humbly wherever and to whatever abysses Nature leads you, or you shall learn nothing." This unquestionably is very excellent advice, but the curious thing is that Huxley himself, and all those who follow his mode of thought, did not take the advice. They are content to ignore a whole range of facts of unspeakable importance in relation to human life, namely, those recorded in the gospel narratives of the New Testament.

Only a very ignorant person would say that the Central Figure of these short biographies, namely, Jesus of Nazareth, never existed as an historical person. We have the independent testimony of the Roman historian, Tacitus (Consul, A.D. 97), to His existence and crucifixion.[1] Also we have the letters of Pliny the younger to the Roman Emperor, Trajan, referring to the number of His disciples not a century after.[2] Also the pagan philosopher, Celsus, makes a reference to the crucifixion. The original copies of these biographies are, however, all lost, or at least not found. But scattered about in various places we have some two thousand manuscripts (some mere fragments) professing to be more or less perfect or partial copies of the originals. The two oldest copies, called the Codex Vaticanus and the Codex Sinaiticus, date back to the early part or middle of the fourth century about A.D. 300–350, and therefore some three hundred years after the oldest original. But critics and scholars have been able to be convinced by quotations in earlier manuscripts that the originals of the first three Gospels, called the Synoptic Gospels, substantially in the form in which we have them now, must have been in existence before the destruction of Jerusalem by the Roman armies in A.D. 70, and probably ten years earlier. Hence written accounts of the words and works of the Christ must have been in circulation about thirty to forty years after the events they record.

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[1] See *Annals*, xv. 44.

[2] See *Epistol.*, x. 96.

The theory that all the supernatural incidents and accounts of miracles in them were a late addition to an account of a normal human life was held at one time, and even now is by Modernists, but it is quite out of agreement with the facts. All persons at or about middle age are able to recollect quite clearly events that happened or did not happen thirty or forty years previously. If, then, these biographical writings were in circulation about A.D. 60–70, it is impossible they could contain precise descriptions of events which never really happened, because very many persons must have been alive who could have confirmed or contradicted the statements. Furthermore, the acknowledged oldest Gospel, namely that of Mark, contains accounts of more miracles than does the much later Gospel, namely, that of John.

St. Paul tells us in his First Letter to the Corinthian Church, which is regarded by all New Testament critics as a genuine Pauline work dating before A.D. 65, that there were then living more than 250 persons who had seen the risen Christ after His resurrection. He would hardly have ventured to make this statement in writing if all this number of persons could have contradicted the statement if not true.

Moreover, if all the accounts of the resurrection and the miracles of Christ were entirely fictitious and never took place, it is almost impossible to account for the sudden and rapid rise of the Christian Church, and the large number of Jewish priests and people who at once became associated with it, all linked together by a firm faith in the actual occurrence of the stupendous miracle of the bodily resurrection of the Christ, and in the actuality of the miraculous deeds He performed, such as the multiplication of a few loaves and fishes to feed thousands of persons, the production of large shoals of fish in a lake at places where there were no fish shortly before, the instantaneous cure of chronic organic diseases, the raising of dead people to life, and the conversion of water instantaneously into wine.

It is absolutely impossible that these three records of the life of a Person to whom these deeds are ascribed could be wholly untrue, and yet be in circulation within thirty to forty years and received as true. It is quite contrary to all experience. No one could publish now (1933) a biography of Queen Victoria (who died in 1901) containing anecdotes about her wholly false, and yet have it widely accepted as true. It would be contradicted at once by contemporary subjects. It is futile, then, for those who have never given any careful attention to the proofs of the veracity of these gospel records to say that Creation is incredible or impossible, because in them we have precise statements of events which were true acts of creation by Divine power.

We cannot therefore deny the possibility or occurrence of acts of Creation as described in the first chapters of the Bible without also denying the creative miracles in these Gospels which took place not much more than nineteen hundred years ago.

These acts of Creation described to us in the Gospels are attested indirectly by all the irrefutable evidence for the great miracle of the Resurrection and its most remarkable consequences. In spite of all efforts or attempts to refute it, the evidence for its actuality is overwhelming, and so acknowledged by all who have gone carefully into it. And it gives an indirect but strong evidence for the occurrence of all the rest of the miracles.

We have no warrant for picking out some of them, such as the miracles of healing, and ascribing them to a sort of faith cure, but denying the so-called nature miracles. They all form a coherent body of truth and are entirely consistent with the character and teaching of the Person to whom they are attributed. But if in these descriptions of them we have not fictions or untruths but records of facts, then our duty is to follow Huxley's good advice and sit down before them as little children at school and follow where they lead.

And they lead in a direction exactly opposite to that of the teaching of Evolution.

They show us the sudden and unexpected appearance of a Person in whose hands all the energies of nature and all matter and life were perfectly plastic and controlled, who could still the storm, cure the hopelessly diseased, feed the hungry, and raise the dead by a word. The theory of Evolution will not explain Him nor account for His acts and powers. They are perfectly out of line with all normal human experience or powers, and yet are confirmed by evidence which cannot be entirely refuted.

They show us that Creation by Divine fiat is not an impossible or incredible thing, and that we may be on the wrong track altogether in assuming that the material world has grown up spontaneously and without any discontinuity by a kind of inherent power in no way dependent on any Personal Will, or that nothing can happen or has happened not in accordance with the order of nature as we now know it.

If this latter teaching was only academic, or concerned matters far removed from practical life, it would not attract the attention of that ubiquitous person, the man-in-the-street. He is not much able to follow scientific reasoning in detail and not much interested in such questions as the expansion of the Universe or its melting away, as long as it will last his time. Nor does he feel great interest in the origin of animal species, but what he *is* greatly interested in is his own origin, life, and destiny. He is apt to take as settled truth things he learns from eminent scientific men especially when they occupy high official positions or have great powers of exposition. The daily newspapers, which are his chief source of information, always supply him with full accounts of any utterances on the subject of his evolutionary or animal origin. Whole columns will be given even to reports of sermons which assure him he was derived from a tangle of apes millions of years ago or to an account of the discovery of a few skulls of anthropoid type declared to be an adequate basis for assurances that his evolutionary origin is indisputable. The conclusion he draws from all this teaching widely broadcast is that all Biblical accounts of man's creational origin, spiritual nature, and future destiny are fables, perhaps having a certain metaphorical value, but not literally true.

The immediate inference is that the truly wise course is to pay attention chiefly or only to material things, endeavour to obtain as much happiness as possible for self and fellow human beings, and let the future take care of itself. The assurance that "Man doth not live by bread alone, but by every word that proceedeth out of the mouth of the Lord" (Deut. viii. 3) has been rewritten under the guidance of evolutionary doctrine into the statement: "Man doth not live by the Word of God at all, but by material things and physical agencies alone."

A notable result, therefore, of the popularization of the doctrines of Evolution and Darwinian anthropology has been to diffuse a subtle poison, stifling or destroying the spiritual life in man. It teaches that the moral law is merely the outcome of human convenience and tribal necessity, and that evil or sin is only the remains of the brute still surviving in humanity. It can hold out no certain hope of any form of superior existence for human life beyond the present one, if we exclude the faint and somewhat doubtful suggestions of psychical research.

It is perfectly impossible to adhere to the doctrines thus taught and at the same time to hold a belief in a personal, omnipotent, and omniscient Deity, the Creator and Guardian of mankind whose tender mercies are over all His works, but who is also infinitely holy and whose moral law is framed and essential for the stability of his creation of rational beings such as ourselves.

The sceptic points to the existence of sin and evil and sorrow in the world, and declares that the Supreme Being cannot be both omnipotent and also all-loving, or else he would prevent it. Or else he charges the Deity with being the author of evil. Both these views are entirely erroneous.

The correct view, we think, is as follows : Even an omnipotent Deity cannot perform contradictory acts. He can create what He pleases, but He cannot create it and leave it uncreated simultaneously. He can give what He chooses, but He cannot give it and also withhold it at the same time. If, then, He has bestowed upon His rational created beings the power of free choice in any degree, they may exercise that will in opposition to His will or they would not be free.

This power of free will or choice is essential for any companionship or affection between fellow human beings, and for worship and communion with Himself. Any compulsion or necessity is fatal and destructive to it. Thus, a father would be pleased if his little child said to him spontaneously, " I love you, dear father." If, however, the child were told it would be given no dinner until it did say it, what value would it then have to the father? In the same way we are pleased with the evidences of disinterested love or friendship of our fellow-creatures. But it is destroyed at once if we suspect any taint of interested motive or compulsion.

The Creator likewise desires the worship of His creatures, but it must be spontaneous, and not done under compulsion.

We cannot have any companionship with a machine, nor can we apply to its behaviour the words " right " and " wrong," except metaphorically. We do not say our motor " did wrong " to break down on a journey and cause us to lose an appointment. But we can say a messenger-boy " did wrong " to linger when sent on a message and so cause some mishap. This power of choice is, however, coupled with a very limited power of foreseeing the consequences of it. Accordingly evil in this world arises from the exercise of free will in opposition to or not in accordance with the Will of the Creator whose fore-knowledge and will is perfect. He will never, however, force our free will, for to do so would be to convert us into machines. In one of his Essays (*Lay Sermons*, p. 340), T. H. Huxley says: " I protest that if some great Power would agree to make me always think what is true and do what is right on condition of being turned into a sort of clock and wound up every morning before I got out of bed, I should instantly close with the offer. The only freedom I care about is the freedom to do right. The freedom to do wrong I am ready to part with on the cheapest terms to any one who will take it of me."

It is curious that so acute a thinker as T. H. Huxley did not see that if he was changed into a sort of machine the words " right " and " wrong " would have no application to him at all, and that as a piece of mechanism he would sink immeasurably in the order of Creation below that of a being gifted with the power of choice, and being gradually trained to use it rightly.

The great problem of the abolition of evil is therefore that of bringing the wills of finite created rational beings such as ourselves into perfect harmony with the infinitely holy will of our Creator without compulsion, which would destroy the possibility of communion and worship. The solution of that problem is the subject of the writings called the New Testament, and they show us how and when the will of God may be done on earth as it now is done in heaven.

The theory of Evolution can give no answer to the question—How can evil and sin be abolished? except to assert that given time enough it will abolish itself. But that is not likely as long as human nature remains as it is now, and to make any effective change requires a creational operation and a creating Power. Human nature can no more elevate itself morally than a man can lift himself from the ground by taking hold of his waist-belt. It requires a force from outside in both cases.

To sum up, finally, we can say that although the intellectual arguments from design, beauty, or rationality in the Universe are not so complete as to compel forcibly an assent to the existence of a personal Creator, they are still of such a character as to render a creational explanation of the material world vastly more probable than its production by any impersonal self-acting agency called Evolution. It is perfectly allowable to assume that such creation occupied vast spaces of time and was effected in a series of acts of Divine Power. If, then, the word Evolution has its meaning strictly limited to describe a series of events or processes, without denying that there is or has been a continual manifestation of Divine Thought and Will, it is not open to great objection. If, however, it is employed as a substitute for such Divine Creative Power, and, in short, has characteristics of Deity attributed to it, which is very commonly done, then it is atheistic in tendency and unlimitedly pernicious. Its adoption in human thought weakens or destroys the God-consciousness latent in every human soul, and with it that of the serious consequences of a disparity or disagreement between the Divine and the human will which is the source of sin and that latent desire for an agreement which is the starting-point for a thirst after righteousness and spiritual life.

The opinion that the human being is merely an improved animal, one with them in origin and therefore doubtless one with them in destiny, and losing personality in death of the body, concentrates attention on material things alone which are seen and temporal, to the entire exclusion of it from things which are not seen and eternal.

We can only defeat this erroneous doctrine by a reasoned insistence on the truth of the Creational explanation, namely, that Man is a spiritual being, incarnate for a time in a material frame, into which the Divine Spirit at his inception breathed the breath of life that his end, in the words of the Assembly Catechism, might be to glorify God and enjoy Him for ever. The modern utterances from press, platform, and even pulpit as to his evolutionary origin are, in the opinion of many thoughtful persons, one of the reasons for much of the materialism of the present-day. We must therefore meet it by a careful presentation of the arguments against it, and those which show his essentially spiritual nature, since he was created in the image of God, who is a spirit ; not destined therefore, like the beasts, to perish, but to enjoy in some far-off future on specified conditions the privileges and power of an endless life.

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